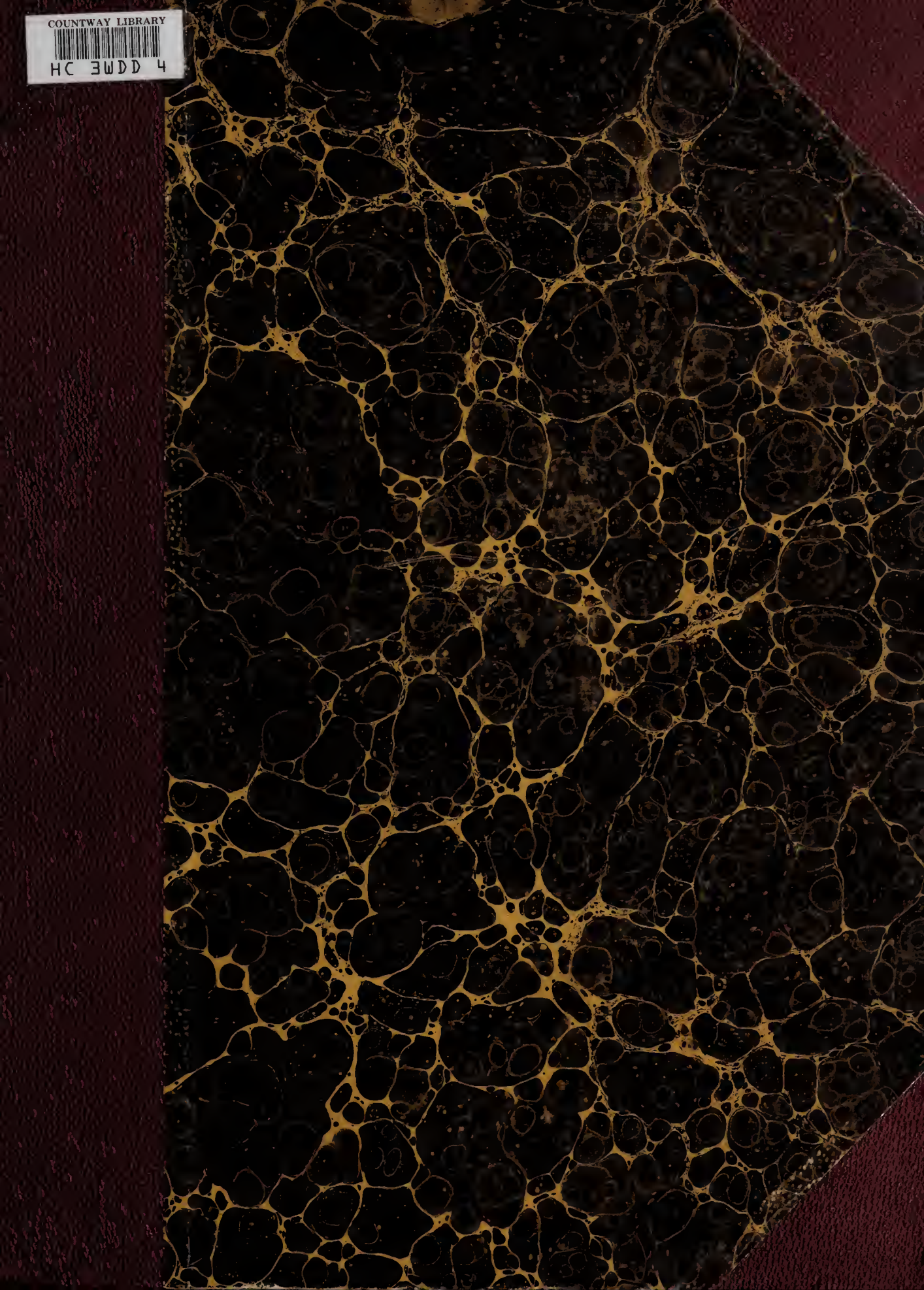


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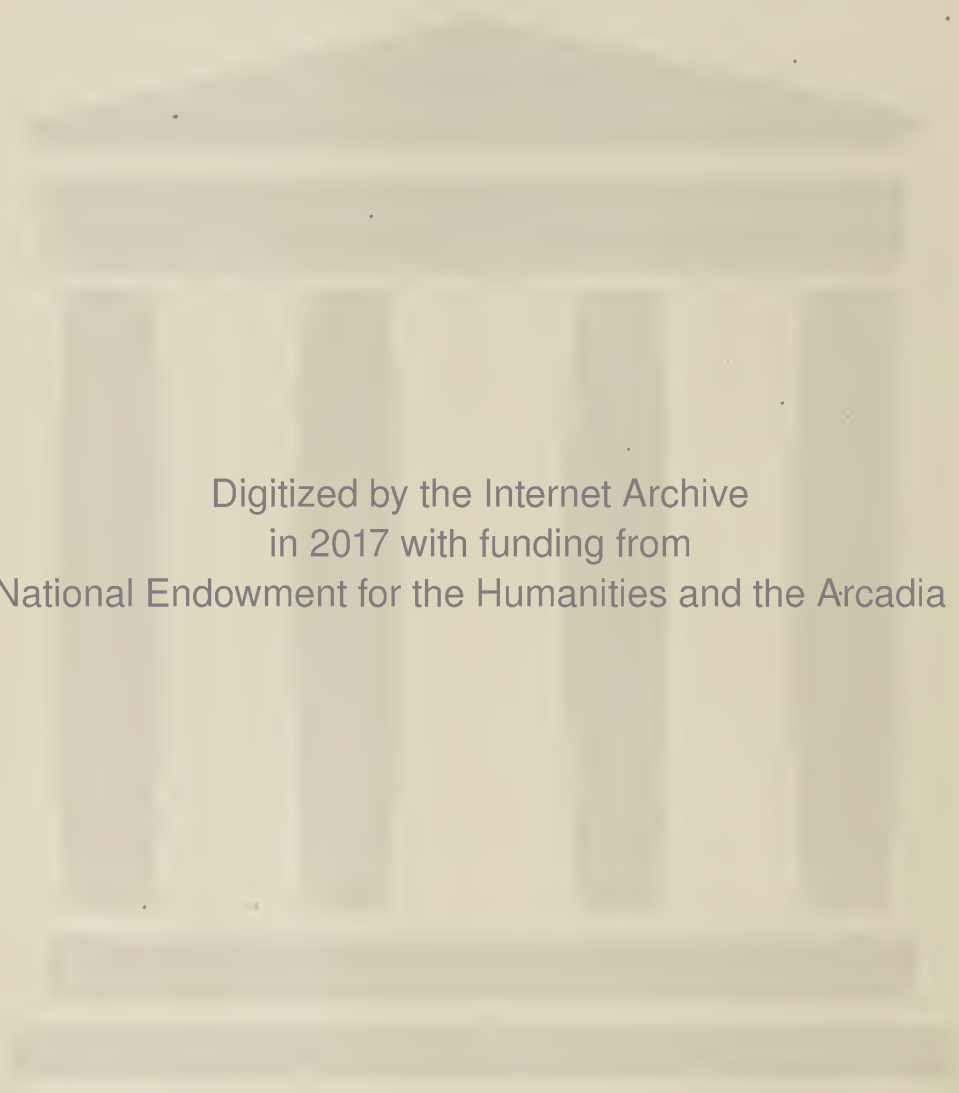
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A SEMI-MONTHLY MEDICAL JOURNAL.

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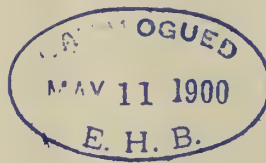
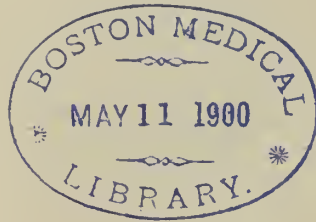
ALEX. J. STONE, M. D., LL. D. }  
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VOLUME XIX.

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ORIGINAL ARTICLES.

THE SUPERIORITY OF AMPUTATION OF THE CERVIX UTERI OVER TRACHELORRHAPLY.\*

BY JOHN H. RISHMILLER, M. D.,  
Minneapolis.

I have no apology to offer in presenting this subject of the restoration of the lacerated cervix uteri for your deliberation and discussion, as it has long withstood all prejudice and professional criticism, and finally has received from the foremost ranks of renowned teachers a unanimous verdict as a justifiable and even obligatory operation. To make more lucid the points which I wish to present further on, allow me to recall some of the salient features of mechanical laceration of the uterine cervix encountered during parturition.

The os uteri in very few cases dilates sufficiently to let the child pass without some laceration. As a rule the uterine contractile force increases in proportion as the os enlarges. This force reaches its maximum just before delivery, and if the os uteri is not sufficiently dilated by stretching, it is torn. In forceps delivery, before dilatation is complete, the laceration is usually greater than when left entirely to nature. Lacerations are either unilateral, bilateral, anterior, posterior, multiple or stellate. The predominant laceration with the most extensive rent appears to be on the left side. This predilection is attributed to the child's left position. It has been my observation that the after effects of suturing lacerations immediately after delivery have proven to be bad surgery; firstly, faulty apposition; secondly, cervical canal becomes either too small as a rule, or too patulous as an exception; and thirdly, retroversion of the uterus.

Clinical experience has demonstrated that we have more inflammation on the left side of the uterus than on the right. According to Pozzi, this condition is due to the involvement of the left adnexia, but he is unable to explain satisfactorily the exemption of the right tube and ovary. This opinion does not clearly and satisfactorily answer the question because doubtless the laceration on the left side is caused by the occiput in its descent in the first position of the head. In unilateral lacerations, the two flaps and the uninjured side form a tripod, with two legs shorter than the third, so that the fundus uteri must inevitably be tilted towards the injured side. Cellulitis is a common result of the laceration. As cellulitis is followed by cicatrization, so con-

traction is the sequence of the latter, and the result will be that the fundus uteri has been drawn and anchored towards the injured side. Therefore, it rests without a doubt upon the fact that its predominance of pain in the left iliac region is due to the cellulitis and subsequent cicatrization in the broad ligaments dating from the puerperal condition.

Through habit we are accustomed to use the right hand quasi-automatically upon all occasions, and we know from experience that the integument over a frequently used member through friction, becomes hard and callous, which is nothing more than strata of pavement epithelia of very low vitality. Consequently, in all my vaginal examinations, I use the index finger of the left hand, believing that the touch buds are more sensitive than in the right.

As carcinoma of the cervix uteri is almost exclusively found in women who have more or less laceration, it will not be amiss to say a few words regarding the differential diagnosis in order to determine the proper operative treatment. To assert my position, whenever there exists a strong clinical suspicion corroborated by microscopical evidences of malignant disease of a lacerated cervix uteri, radical hysterectomy is the only justifiable procedure. It is impossible to dwell too much on the importance of early diagnosis, and as the advanced stage does not concern us I will confine myself to the incipient one only. The microscope is the greatest revelator we possess in clearing up a doubtful diagnosis, and in all uncertain cases a section should be cut off and examined. Sir John Williams says of one of his cases: "It was not hard, it was not unduly red, it bled slightly on digital examination, it did not enlarge, and yet it looked vicious." In such suspected cases it is well to open all retention cysts and apply glycerine tampons for a few days, which will not materially discolor or alter the appearance of the doubtful area. If this does not present a healthy appearance after a few days judicious local treatment, we should look upon the case with suspicion. Friability is the great characteristic and almost pathognomonic sign of carcinoma, which may easily be distinguished from the sole leather consistency of cicatricial tissue. This friability may be detected by the ease with which the volcella tears through, and by the facility with which the sharp curette scoops out the malignant disease. Friable tissue can be crushed and broken down between the finger nails; is yellowish white in appearance and almost devoid of blood supply. There is usually a darker shade of color about the edges of the area of invasion, which can no more be described than can a smell. In non-malignant dis-

\*Read in the Section of Gynæcology of the Minnesota State Medical Society, June 17, 1898.

ease scraping over the surface with a sharp curette will only make the parts bleed and detach epithelia and granulations. If this amount of manipulation be applied to the tissues in an early stage of epithelioma, the effect produced is very distinctly brought out by comparing it with a chronic case of cervical catarrh, complicated by ectropion and retention cysts. A microscopic examination will invariably decide the diagnosis, and if at all uncertain it is usually not carcinoma.

All lacerations of the cervix are open wounds, and if the lochia flowed away properly, and if the wound be kept aseptic during the lying-in period, the rents would unite without leaving a sign of bad granulation, but such is seldom the case. After the anterior and posterior flaps become once separated their divergence increases, and the former is crowded forward into the axis of the vagina while the latter is pushed backwards into the cul de sac. When the laceration involves the broad ligament the mucous membrane of the cervical canal invariably rolls out as soon as the patient assumes the upright position, and then all reparative efforts of nature are defeated. This eversion is then exposed to friction against the vagina. Likewise the increased size and weight of the uterus, which after a recent delivery is larger and heavier than natural, presses down the cervix uteri in the direction of the vaginal outlet. The circulation becomes obstructed in the flaps and a source of irritation is established and involution checked, hence this is an œdematous elongation and not a neoplastic condition, which has been described by some authors with so much apparent sagacity and unnecessary prolixity. With insufficient support and enlargement of the uterus prolapsus must occur, and as the viscus descends to the pelvic floor it is retroverted. You will probably know what important histological changes may take place in the torn cervix. In the first place, cicatrization caused by the excessive epithelial development from the mucous membrane of the vaginal surface of the cervix on the one side, and from the cervical canal on the other. As these meet they form a fibrous scar which Emmet has designated "the cicatricial plug." This cicatricial tissue, by its consequent contractions hastens cystic degeneration and hyperplasia, and by compressing the nerve terminations gives rise to numerous nervous disorders in remote parts of the body, such as pain in the sacral region, the seat of sympathetic pain for the cervix.

Within the present decade much study and investigation has been employed in revealing the intricate minuteness and the extensive distribution of the lymphatic system of the pelvic generative organs and their relation to the adjacent structures and important viscera. These are the main factors in distributing the virus of sepsis and inflammation in the pelvis, and should an un-

recognized septic focus be tampered with and meddled with unnecessarily, it will some day or other certainly prove the lack of wisdom of operating when there exists pelvic inflammation. From the ripened observation and extensive experience of others, with some of my own cases of an unforeseen focus of preëxisting cellulitis, I would caution you to tread gingerly and regard every bush a bear. An operation for restoring the solution of continuity of a lacerated cervix uteri is contraindicated in all periuterine or adnexial inflammations. Furthermore to sew up a lacerated cervix with the fundus retroverted and adherent to the sacrum will not relieve the patient's symptoms for which she comes to consult you, and still this quasi-surgical procedure is perpetrated every day. "Under the guise of surgery, the uterus has been subjected to a degree of malpractice which would not be tolerated in any other part of the body." (Emmet). These are the ideal cases where we can bestow the greatest possible benefit and accumulate a heap of thankfulness by putting the patient, before operation, through a judicious and systematic course of painstaking and persevering vaginal hot douches and medicated tamponade.

In repairing a lacerated cervix we are expected to restore the injured parts to as near the virginal condition as we are able. When we have a laceration involving the internal os so as to extend into the broad ligament, we have a condition which requires our indefatigable attention and consideration of the future welfare of the patient. These extensive rents are most frequently found among the poorer classes, and in some it is almost miraculous to make a vaginal examination and not find them pregnant. These are the cases where frequently we can elicit a clinical history of one miscarriage following another at the third or fifth month, which ultimately tends to make life so miserable as to be unbearable. These are the cases where, inevitably in advanced age, the largest percentage do succumb to uterine carcinoma should they not be carried off in their prime of life by some intercurrent disease.

A few words about sterility. It is in the domain of contradiction and controversy for one operator to unhesitatingly promise impregnation by enlarging a small or narrowed cervical canal, and another to assert his undebatable position by repairing a cervix for directly the opposite effect. Some years ago Dr. Dudley, of Chicago, improvised an operation for dysmenorrhœa in ante-flexion, with which I presume you are all familiar. Of late years it has been practised with success and advocated not only for dysmenorrhœa, but also for sterility, with such favorable results as to warrant a repetition, albeit we have divulged one case after another for sterility due to a contracted cervical canal or to a flexed

uterus, and if any of you question it in performing it in your next case, remember that it has been answered in the affirmative. It stands to reason, and in my opinion experience bears it out, that a woman with a large cleft cervix is more liable to become pregnant than one with an intact one. Again we encounter patients with large lacerations whose health is undermined and jeopardized by excessive impregnation. It appears to one almost an obligatory duty to operate on just such cases, and I vouch for the statement that in repairing a cervix it prevents conception to the extent and degree that are apparently existing under normal circumstances.

The repair of a lacerated cervix has unquestionably been performed too often and in many instances for no definite purpose. The outcome has been frequent disappointment to the physician, and discouragement, with even greater impairment of health, to the patient. Ordinary and simple rents, without symptoms or associated complications, should not have a place in the category of plastic gynecological surgery. The physicians that have become antagonistic to this operation are the ones who in the first place have operated upon everybody and anybody in a slap-dash and hap-hazard fashion, and who evidently have not had the benefit of such hospital training and experience as to perform it properly.

So far I have not designated any particular operation for restoring a lacerated cervix. In the succeeding part of my subject I wish to call your attention to a low amputation of the cervix uteri in preference to trachelorrhaphy.

I am led by strong conviction that I can get better results from the former operation than from the latter, doing the same for almost the identical conditions, with the proviso that I do not desire to be understood as advocating it for lacerations that extend through the internal os. This would be preposterous, as it would require the removal of the major part of the internal os uteri. Likewise, I do not wish to decry trachelorrhaphy, as it has its undeniable place in all properly selected cases. Amputation may appear prodigious to you while your colleague says trachelorrhaphy is the only proper procedure, because it is not so capital an operation and because it does not necessitate the ablation of the whole external os. This is fallacious. You are all familiar with the resemblance of some cleft cervices to the mushroom stem. What is this enlargement due to? You answer: To obstructed circulation in the flaps. Yes; and you all know how surprisingly you can reduce this hypercongestion of the flaps by a week's daily medicated tamponade. Such a surprising change will occur that you would hardly recognize the same conditions. If I should show you one of

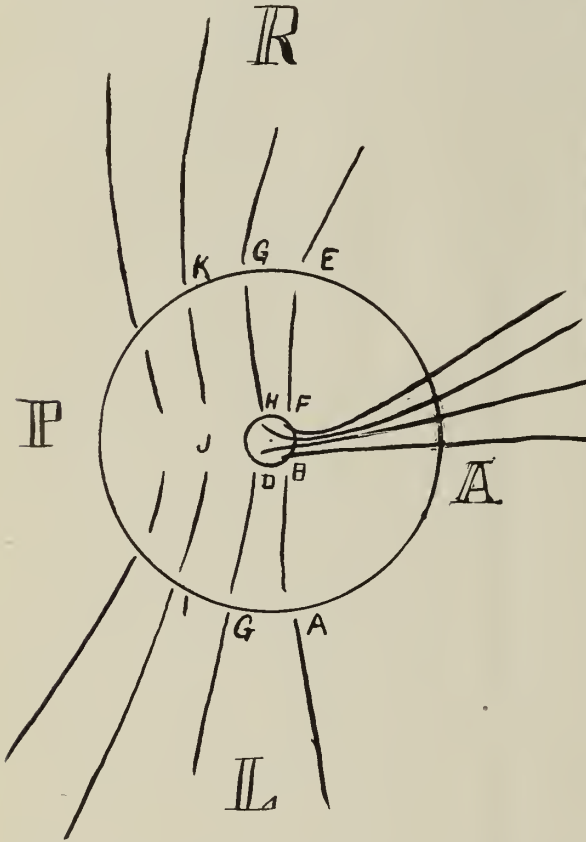
these large cervices and recommend amputation it would appear to you unjustifiable to cut away all the tissue involved in the flaps. Should you see the same conditions after a course of local treatment you would say the laceration is hardly extensive enough to call for any operation. This is an ideal case for performing an ideal operation: You remove a mole hill and get credit for removing a mountain. You can get the same results without the local treatment, but I simply wish to show that not as much is removed in amputation as is universally supposed. In speaking of amputation I wish to be understood as meaning superficial amputation, a cone-shaped amputation, or in other words a cone-shaped denudation of the whole laceration, including the previous external os. In such an amputation the musculature of the cervix will be immaterially affected and gestation and labor will no more be interrupted and interfered with than in a normally intact cervix.

We should get better results in amputation than in trachelorrhaphy for one reason, that the circulation is more nearly restored to a condition approaching the virginal state. Also there is less liability of distortion and traction on the valveless veins of this erectile tissue. Amputation is easier to perform and in this respect recommends itself to the less experienced. I admit you can easier do a bungling piece of surgery with the idea in mind of doing trachelorrhaphy, such as suturing the thickened vaginal tissues as a prepuce over the cervical flaps, but there is only one way of performing an amputation. Furthermore, in removing a cone-shaped piece of the flaps and angles of the laceration we are more radical in removing all the cicatricial plugs. The immediate, with likewise the after cosmetic effect of trachelorrhaphy, appears sometimes unsightly even in the hands of the most experienced and fervent advocates. It has been my observation that patients have less pain after amputation, although trivial in either operation. In trachelorrhaphy, very frequently, the two ridges of undenuded mucous membrane are so squeezed together as not to allow free uterine drainage until some involution of the cervix has taken place. This is not the case in amputation, and the thought of sepsis need not be entertained; on the contrary the cervical canal is as patent as in the normal state. The scar tissue, in not being removed thoroughly, has frequently served as a disappointment in the results. The sutures in trachelorrhaphy are more liable to cut out, as they must be tighter in order to bring the everted and denuded surfaces into back to back apposition. In this tension of the sutures by bringing the deeper parts thoroughly together, the accurate apposition of the mucous membrane on the flaps generally suffers.

One disappointment which I have met with

in amputation is the frequent retroversion of the uterus. Formerly, I invariably carried my sutures from before backward, as taught by Dr. Emmet, but this of late I have modified, and now, whenever the laceration permits, carry my sutures from side to side, which prevents this malposition. I, furthermore, always encourage patients to change their position in bed, such as lying on either side or even on the face. Doing the suturing from side to side and not permitting patients to constantly lie on their backs will relieve our anxiety of a possible retroposed uterus.

I will now briefly describe the operative procedure. The patient is placed in the Sim's position. After exposing the lacerated lips with the



duck-bill speculum, the cervix is seized with a tenaculum. The uterus is then, by gentle and steady traction, brought down to the vaginal orifice. This traction must be done with caution and not with a jerking movement, which would be liable to rupture some of the blood vessels. Through this traction of bringing the uterus down, the calibre of the vessels is to a great extent diminished, and consequently hemorrhage greatly lessened. At this stage it is always well to introduce a vesical sound so as to observe how closely and intimately the thickened vaginal mucous membrane of the anterior lip is attached

to the bladder wall, and thereby save you in some instances from entering the urinary vesicle.

The universal scissors or any curved and sharply pointed scissors are to be preferred, as they are best fitted for cutting out the dense cicatricial tissue. An assistant must steady the cervix at the vaginal outlet with a tenaculum. The operator seizes the diseased tissue with another tenaculum, to be excavated in the shape of a cone. The cutting must start at the junction of the vaginal mucous membrane with the lacerated and eroded surface. The scissors must always be pointed so as to cut towards the center, that is, the cervical canal, as a precaution against entering the bladder and peritoneal cavity. After this cone-shaped piece is removed it is well to widen the field of operation but not to deepen it unless it is necessitated by diseased cicatricial tissue. This widening is done by removing, piece by piece, in a circular manner, the end of the cervix, which is situated directly within and surrounded by the vaginal membrane, or in other words, as excavating a finger within a glove.

I invariably use silver wire sutures, and in order to be more explicit of how to introduce them I will employ a diagram. A portion of the vaginal tissue on the left side is caught up with a tenaculum and a suture is introduced at A and brought out again on the stump surface. The suture is then carried over the stump surface and reëntered at B, and brought out from the cervical canal. The same manœuvre is gone through with suture C D. On the right side two similar sutures are introduced, starting likewise on the vaginal mucous membrane. These four sutures are the most important in the operation and after they have been introduced the major part has been accomplished. It is well to use finer wire and smaller needles for these four sutures than for the remaining. For the next suture the vaginal edge is caught at I, and brought out at the uterine stump. Then it is to include a sufficient portion of the uterine stump tissue at J, so as not to cut out, and in turn made to reënter at K, and G brought out above on the vaginal tissue. In like manner as many sutures as are necessary should be introduced like I, J, K, on either side of the cervical canal. Sometimes difficulty is encountered in catching up enough uterine stump tissue with a suture, but this can be obviated by using sharply curved needles. Trocar pointed needles should always be used. The points where the sutures take up the cervical canal mucous membrane are stationary, but the vaginal mucous membrane (points A, C, E, G) can be freely and easily drawn over the stump to the edge of the uterine canal (respectively to points B, D, F, H). Now, by twisting the sutures that take in the cervical canal it is evident that we must get flat apposition and accurate approximation and thereby entirely cover the wound.

The sutures on either side of the cervical canal are then twisted in the usual manner. We have accomplished our purpose by uniting the free vaginal mucous membrane to the uterine canal and by thoroughly covering the cervical stump. The uterine sound can be readily introduced, and the natural calibre of the cervical canal has been preserved.

The sutures are removed on the twentieth day and the patient remains in bed three weeks. Few surgical operations give a more satisfactory recovery and beneficial results.

### THE PATHOLOGY AND PROGNOSIS OF EXTRAUTERINE PREGNANCY.\*

BY J. L. ROTHROCK, M. D.,  
St. Paul.

While the curious anomaly of the implantation and growth of the impregnated ovum outside of the uterine cavity with its associated pathological changes has long been recognized, it is only within comparatively recent years that it has received the attention of the pathologist which it merits.

Older literature abounds in scattered reports of cases, mostly clinical in character, with little or no comment beyond classification according to the several recognized varieties. With regard to its frequency, it is extremely difficult to arrive at a satisfactory conclusion.

According to obstetricians, under whose observation only a comparatively few cases came, it was formerly believed to be of rare occurrence. If to this small number, however, we add those cases of sudden death from internal hemorrhage following rupture of tubal pregnancy and those cases of hemorrhage into the broad ligament from the same cause which were formerly regarded as pelvic hæmatoma, the total assumes a proportion making it by no means so rare as was once believed.

With the application of abdominal surgery to the treatment of gynecological affections, many cases hitherto unsuspected have been discovered, often accidentally.

Thus Toth<sup>1</sup> among seventeen hundred women suffering from pelvic disease sufficient to warrant laparotomy found thirty-one cases, or one in fifty-five cases, a proportion which seems by no means unreasonable.

Before considering the pathology of this subject it will be instructive to review briefly the anatomical features of the tract over which the ovum passes on its way from the ruptured follicle to its customary place of implantation, the uterine cavity, and incidentally the physiology of the process of ovulation.

The oviduct runs along the upper border of the broad ligament enclosed within the folds, the distal end extending out toward the pelvic wall terminating beyond and above the ovary in a funnel shaped orifice, the pavilion or infundibulum, surrounded along its border by a fringelike process, the fimbria. Between the ovary and the fimbriated end of the tube a further direct tract of communication is furnished by a groove running along the border of the broad ligament. The oviduct as well as the groove extending from the ovary is lined by columnar ciliated epithelial cells, the motion of the cilia being towards the uterus. The fimbriated processes of the tube are composed of erectile tissue, so that the free end of the tube is capable of applying itself to the ovary. The view of ovulation most commonly accepted hitherto was that at the moment of rupture of the ripe follicle the pavilion of the tube applies its fringelike process to the surface of the ovary, while the ovum drops into it and is carried along towards the uterine cavity by the movements of the cilia. That this mechanism is necessary for the safe conduct of the ovum to the uterine cavity is no longer credited, since cases are on record in which after removal of the tube on one side and the ovary on the opposite side, pregnancy has still occurred, demonstrating beyond doubt the ability of the ovum to reach the tube on the opposite side. At what point after leaving the follicle or even before, numerous carefully observed cases demonstrate. It is generally believed however that under normal conditions this takes place in the uterine cavity.

As regards the distance the spermatozoa may advance into the genital tract, owing to lack of opportunity for observation little is known.

I can find in literature but two instances in which living spermatozoa have been found in the Fallopian tube.

One related by Zweifel<sup>2</sup> of an autopsy made by Birch-Hirschfeld on a puella publica, sixteen hours after death who died "in actu coitus" of suffocation from coal gas. No mention is here made of any pathological lesion of the tube. Dührssen<sup>3</sup> also reports a case in which three weeks after the last possible coitus a tube slightly diseased removed by celiotomy contained living spermatozoa. Comparative studies made on lower animals demonstrate that spermatozoa almost invariably are to be found in the Fallopian tube and may penetrate even as far as the ovarian follicles.

According to some authors, impregnation of the ovum always takes place in the Fallopian tubes, the impregnated ovum afterwards passing to the uterus before finding a lodging place. On the other hand so good an authority as Tait says that under normal conditions this never happens, and that the uterus must be regarded as the nor-

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mal point of impregnation of the ovum, and advances in explanation the theory that as long as the cilia remain intact, spermatozoa do not penetrate into the tubes, the course thither being hindered by the ciliary waves. Wyder, too, is of the opinion that the normal point of impregnation of the ovum is in the uterus. The conditions necessary for the determination of extrauterine pregnancy are retention of the impregnated ovum outside the uterine cavity, and a sufficient stimulus to produce those changes in the surrounding structures to afford it facilities for implantation and growth. What, then, are these conditions?

Freund advanced the theory that the cause was to be sought in lack of development of the tube, it remaining infantile, and that therefore it was to be more frequently found in individuals who showed signs of degeneracy, as, for example, those of small stature with contracted pelvis, abnormal head, deformity of the spine and extremities, etc., but, as Fehling points out, such conditions are rarely found in those with extrauterine pregnancy, and, furthermore, extrauterine pregnancy is more common in those who have borne children than in primiparæ.

Long ago Virchow made the observation that a large proportion of the cases which came under his notice were accompanied by old pelvic inflammatory lesions, especially perimetritis. In accord with this, Parry observed the clinical fact that extrauterine pregnancy was prone to occur following a period of sterility of longer or shorter duration.

Martin, from a series of ninety-one carefully observed cases, found inflammatory lesions of varying degrees in the majority operated upon, ranging from salpingitis to almost complete occlusion caused by perimetritic adhesive bands.

Gonorrhœal infection has long been regarded as a frequent cause for the resulting inflammatory lesions, and the sequence of a period of sterility of longer or shorter duration are all conditions which so resemble the antecedents of extrauterine pregnancy. In confirmation of this view, Ahlfeld observed that extrauterine pregnancy was of much more frequent occurrence in the larger centres of population, where gonorrhœal infection in women is also relatively more frequent. Of other causes which have in recent years attracted much attention should be mentioned mechanical obstructions of the Fallopian tube from various causes, as atresia or flexions of the tube, congenital or acquired, as, for example, flexions from inflammatory adhesions, diverticula or polypi blocking up the lumen of the tube; accessory pavilion with lumen terminating in a blind sac in which the impregnated ovum lodges: all of these conditions have been advanced as causes, and no doubt have in certain instances at least a relative bearing on the causa-

tion. As conflicting with the theory that extrauterine pregnancies develop only in diseased tubes, we have only to recall the numerous cases in which a careful microscopical examination has shown the mucous membrane healthy with the cilia intact in the immediate neighborhood of the foetal sac. On the other hand, it is difficult to understand why a narrowing of the tube from flexure, polypi or diverticula should prove such obstructions, since it has recently been shown by Fritsch<sup>4</sup> that the ovum is able to pass seemingly insurmountable barriers at times. For example, a woman under his observation three years after deliberate ligation of both Fallopian tubes for the purpose of inducing sterility gave birth to a healthy child. Since the introduction of this operation cases continue to be recorded in which not only ligation but even ligation with section of the tube, and in one instance even after resection of a short segment of the tubes pregnancy has taken place normally. It would seem therefore that something more than mere detention of the impregnated ovum in the tube, some unusual stimulus is necessary to bring about the requisite conditions for extrauterine pregnancy. That the simple fact of impregnation of the ovum is sufficient stimulus to cause implantation at whatever point it may occur as some believe, hardly seems probable. At all events, until we know certainly at what point of the genital tract impregnation of the ovum normally takes place, and until further histological studies are made of a much larger number of cases, we must remain in ignorance of the causation of this most interesting phenomenon.

Anatomically, extrauterine pregnancy has been classified primarily into tubal, ovarian and abdominal pregnancy. For practical purposes, however, we need only concern ourselves with the different varieties of tubal pregnancy, since most authorities still hold true primary abdominal and ovarian pregnancies sub judice. With regard to these forms, Tait and his followers hold them as possible but not proven. On the other hand, it is difficult to explain the carefully reported cases of Leopold, Patenka and Martin by any other hypothesis than that they were examples of primary ovarian pregnancy. The same may be said of a few cases of abdominal pregnancy reported. If these varieties do occur, they must be of exceedingly rare occurrence, otherwise from the large number of cases constantly coming under observation an indisputable case must sooner or later make its appearance. On the other hand, secondary abdominal pregnancy is by no means rare. Tubal pregnancy is further classified as

- (a) Interstitial in the uterine end of the tube.
- (b) Tubal occurring at any point in the tube proper.



(c) Tubo-abdominal or tubo-ovarian occurring in the pavilion.

With regard to the frequency of the tube involved, statistics vary slightly, but go to show that extrauterine pregnancy occurs about as frequently in the right as in the left tube. Interstitial pregnancy does not appear to be common. Martin, among seventy-seven cases operated upon, found only one, while Parry from two hundred and fourteen cases collected from literature found thirty-one cases.

The distal half of the tube appears to be the most common seat of extrauterine pregnancy, though it may occur at any point.

With the lodging of the impregnated ovum in the tube characteristic changes take place; its walls become thickened from increased vascularity, a decidua is formed and preparation goes forward for the formation of a placenta.

Meanwhile, simultaneously analogous changes take place in the uterus. The insertion of the placenta corresponds to the point of implantation of the ovum and may accordingly have its seat on the superior or inferior, anterior or posterior surface of the tube, and owing to the fact that hemorrhage has its origin at the point of placental insertion, this becomes a matter of much importance in determining the character and subsequent course of the case, as we shall see presently.

In the majority of cases tubal pregnancy is interrupted within the first four months from rupture of the tube, due to distention.

According to Schrenk, Schauta and others, rupture seems to have occurred most frequently during the second month. Rupture of the sac is in the majority of cases immediately occasioned by hemorrhage taking place at the point of placental insertion, resulting in a sudden unusual distention of the tube. According to Freund and Von Recklinghausen, the resistant power of the tube is much lowered at the placental site by the insinuation of the chorionic villi between the muscle layers which subsequently undergo a myxomatous degeneration. On the other hand, each variety of tubal pregnancy may continue uninterrupted, not only to full term, but the foetus dying and becoming transformed into a lithopædion may be carried for years, as we shall see later.

Tubal pregnancy is subject to various terminations after rupture, determined by the point at which rupture takes place. If into the free peritoneal cavity the ovum may escape, attach itself to the abdominal viscera and the course of pregnancy may continue uninterrupted, thus giving rise to secondary abdominal pregnancy. It may thus become attached anywhere in the abdominal cavity, even, as reported cases demonstrate, to the liver, but attachment to the intes-

tine and immediately surrounding viscera most frequently takes place.

On the other hand, the ovum failing to attach itself is quickly absorbed by the peritoneum, so that a collection of blood constituting an hæmatocele is usually all that is found in such cases operated upon a few days after rupture has taken place.

This is the invariable fate of the foetus in the early months, should the foetal sac rupture at the time of the rupture of the tube. On the other hand, the patient may speedily die of hemorrhage into the peritoneal cavity, and this is by no means an uncommon termination and constitutes by far the most common cause of death. In such cases at the autopsy the abdominal cavity is usually filled with liquid blood. If the hemorrhage is not fatal, the blood may be found coagulated or liquid, for which variation no satisfactory explanation is to be found, though various theories have been advanced, among which the fact that hemorrhage taking place slowly, the fluid in the peritoneum prevents coagulation. In case the hemorrhage ceases with the formation of an hæmatocele, the presence of the blood at once sets up a reactive inflammation with the formation of adhesions, thus walling off the accumulation from the general peritoneal cavity.

Nature now disposes of this hæmatoma by absorption with entire removal of the mass, providing it does not become infected by pyogenic bacteria, in which case suppuration ensues with the formation of an abscess, a termination by no means uncommon in cases treated expectantly. Again rupture may occur extraperitoneally between the folds of the broad ligament. The ovum here likewise may become reimplemented and continue to develop between the folds of the broad ligament, growing on uninterrupted to full term; more commonly, however, a hæmatoma of the broad ligament results and this constitutes by far the most favorable termination of tubal pregnancy. These hemorrhages into the broad ligament may terminate in absorption or in suppuration with the formation of a pelvic abscess. Not all pelvic hæmatoceles are due to extrauterine pregnancy. Zweifel<sup>6</sup> attributed nineteen per cent. of cases coming under his observation to that cause, while Veit places the percentage at twenty-eight. Tait<sup>6</sup> regards it as the most prolific cause, but states that it may occur during menstruation from rupture of a much congested vein, and also that it is a not infrequent sequence of ovariectomy, occurring in as many as eight per cent. of his cases.

The interstitial variety may go on to full term, may be converted into a normal pregnancy, may rupture into the peritoneal cavity or between the folds of the broad ligament. Shwartz<sup>7</sup> reports a case of interstitial pregnancy which ruptured into the bladder in the second month.

Pregnancy occurring in the pavilion of the tube may terminate in one of several ways, the most common being so-called tubal abortion. Different theories have been advanced in explanation of this phenomenon. On the one hand Worth and Veit thought it was due to contraction of the muscular coat of the tube forcing the ovum out of its lodging place, while Martin believed that it was due to the point of placental insertion favoring the development of hemorrhage. The cause of the hemorrhage he thought might be trauma or disengagement of the growing ovum from its lodging place from its increasing size.

Two forms of tubal abortion are recognized, complete and incomplete. In the first the entire ovum is cast off embedded in a coagulum of blood. In the second the partially cast off ovum continues to grow, forming for itself with the aid of inflammatory adhesions a new resting place. In case gestation occurs in the pavilion of a tube which is adherent to the ovary, it is termed a tubo-ovarian pregnancy, to which class no doubt belong many of the cases hitherto reported as true ovarian pregnancies. After pregnancy becomes advanced owing to the dislocation of surrounding structures by the increasing size of the ovum, it becomes a matter of extreme difficulty to place each case in its proper class, and this in many instances can only be done after a careful histological study.

In modern times when extrauterine pregnancy is more looked for than formerly, it is unusual for an unsuspected case to go on developing towards term in case it is not interrupted by one of the many accidents so common.

In this connection, however, it will be interesting to observe the termination of such cases. As above stated in the earlier months if the fœtus escapes into the peritoneal cavity absorption quickly takes place. In the latter months the fœtus becomes macerated or undergoes mummification or becomes transformed into lithopædion which may remain for years. This termination is not so common; Martin noted it twelve times in a hundred cases. Occasionally suppuration of the sac occurred from secondary infection by pyogenic bacteria. When this happens the fœtus may be thrown off gradually, the fœtal bones and remains making their escape through the vagina, rectum, bladder or externally wherever the abscess happens to discharge. This is a most unfavorable termination and very frequently results in death from pyæmia or exhaustion from long continued suppuration. The prognosis of extrauterine pregnancy has improved much since the condition is earlier recognized and more promptly treated. Still it is likely always to be accompanied with a considerable percentage of fatalities especially from rupture and hemorrhage in the early months.

Of two hundred and seventy-eight cases collected by Martin treated expectantly, ninety-one recovered or thirty-three per cent., one hundred and eighty-seven or sixty-seven per cent. terminated fatally, while of six hundred and thirty-six cases operated upon collected by the same author five hundred and seven, or eighty per cent. recovered, leaving a mortality of twenty per cent.

While this percentage seems high, it includes cases of advanced pregnancies in which operation is always a serious matter, together with emergency cases which are almost moribund from hemorrhage at the time of operation, as well as cases which having ruptured at varying periods before the operation had already become septic. Generally it may be said that where extrauterine pregnancy comes under observation in the earlier months before rupture has taken place the prognosis after operation is good, the mortality in the hands of skilled operators not reaching more than three or four per cent. On the other hand for those less fortunate cases in which hemorrhage takes place or which go on uninterrupted until the latter months of pregnancy, the prognosis becomes serious even if operated upon and very grave if treated expectantly.

<sup>1</sup>Labadie-Lagrave et Legueu: *Traite Medico-Chirurgical De Gynecologie*. P. 1081.

<sup>2</sup>Martin: *Die Krankheiten der Eileiter*. P. 48.

<sup>3</sup>Ibidem.

<sup>4</sup>Fritsch: *Centralblatt f. Gynæcologie*. 1898.

<sup>5</sup>Zweifel: *Archiv f. Gynæcologie Bd. XLI H. 1 and 2*.

<sup>6</sup>Tait: *Disease of Women and Abdominal Surgery*.

<sup>7</sup>Schwarz: *Centralblatt f. Gynæcologie*. No. 36. 1895.

## THE SYMPTOMS AND DIAGNOSIS OF EXTRAUTERINE PREGNANCY.\*

By A. W. ABBOTT, M. D.,

Minneapolis.

As in true tubal pregnancy rupture of the tube is inevitable by the fourteenth week, after which time the ovum, if living, develops in the peritoneal cavity or between the broad ligament folds, it will be convenient to consider these two periods separately, namely, before and after the fourteenth week.

Most ruptures occur before the fourteenth week, namely, from the third to the tenth, and naturally the subject has generally been discussed as to the symptoms before and after rupture. However, I thought that it would be interesting to depart from this custom and to consider each of the first three months separately. As the diagnosis is most difficult and the

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danger to the patient the greatest during this period, I believe it will be to our advantage to devote our attention chiefly to these first three months.

At the very threshold of this discussion we are met by the impossibility of determining positively, except under the very rare conditions in which a woman can fix the date of impregnation, when the first month of pregnancy ends. Conception may take place from just after a period to near the time for the following one, and manifestly the first month would end in the former case about four weeks after the close of the last menses, while in the latter, it would end at about seven weeks after. As the majority of women undoubtedly conceive about one week after the beginning of a menstrual period, we may assume, in the absence of more definite data, that the first month of pregnancy ends at about five weeks after the beginning of the last menses, always bearing in mind the possibility of a later impregnation. In the case of the orthodox Jews the first month will end about six weeks from the beginning of the last menses, as eight days are enjoined for the cleansing.

The signs of an extrauterine are quite similar to those of a normal pregnancy plus certain symptoms which are produced by the peculiar position, environment and development of the embryo. Most noticeable among these are the early casting off of the decidua and the rupture of the tube. We must also bear in mind that many of the symptoms of normal or abnormal pregnancy are assumed by a large number of diseases of the abdominal and pelvic cavities.

For the above reasons I believe that the most complete picture of each period should include a comparison of the symptoms of intra- with those of extrauterine pregnancy, a statement of those diseases which present similar signs, with the means of distinguishing them when possible, together with a consideration of those symptoms which are peculiar to ectopic gestation.

There is another reason for presenting the subject in this way. The general practitioner, nowadays, even if of limited experience, promptly and correctly recognizes a tubal pregnancy after rupture, but I am certain that the method proposed above will help to carry us a step further towards appreciating the condition before rupture, thereby saving more lives and giving promise of safety to the fortunate majority whom we can assure are normally pregnant.

The table I herewith present is, therefore, constructed upon this plan, the more common and important signs of pregnancy being taken as a basis. Certain symptoms as kysteine, special character of the pulse and vaginal and uterine temperature are omitted as being unsettled or too unreliable. I have also omitted among the symptoms of extrauterine pregnancy a long

previous sterile period, for with a growing experience and greater ability to make a diagnosis, it is found that this rule is much less reliable than it was formerly supposed to be.

It will be seen from the table that we have nothing whatever to make us even suspect a normal or abnormal pregnancy during the first two weeks, unless we can fix a positive date of impregnation within two weeks before a missed menstruation. During the third week gastric symptoms and softening of the cervix are only occasionally indicative, and least so in tubal pregnancy. During the fourth week the menstrual, gastric and vaginal symptoms are not so often present as in normal pregnancy, but there are certain signs which are suggestive even at this period.

1st. A tender spot somewhere in the tube, not a general tenderness such as we find in salpingitis, but a distinctly circumscribed area confined to the tube. We cannot expect to feel an enlargement at this period. As pregnancy advances a mass may be felt at the former tender spot. It rapidly increases in size, becomes more tender, fixed, and pushes the uterus to the opposite side.

2nd. The microscopic evidence obtained from any irregular, shreddy, bloody discharges or a prolonged flow. If chorionic villi are found or any part of the embryo, the pregnancy is normal; if not found, the surface of the uterus may be thoroughly curetted and further examination made, yet it should be borne in mind that if embryonic products are not found, it is not positive evidence that the gestation is tubal, because the embryo and sac may have escaped or the chorion may have been missed in the examination. The writer regards this as a most important aid to diagnosis, as the chorionic villi, when sought, have always been found by him in uterine abortion.

As the beginning of the sanguineous flow indicates the simultaneous breaking down of the chorion or decidua or both, it follows that the earlier the curetting is done the greater will be the expectation of finding villi in normal pregnancy, and their absence will more certainly point to an extrauterine implantation of the ovum. We are justified in curetting only when the flow and pain indicate that an abortion is in progress or when the evidences are very strongly in favor of an ectopic gestation. When undertaken it should, with the subsequent examination, be most thorough.

Here I wish to emphasize the danger attending curetting in ectopic gestation. It has repeatedly happened that rupture has taken place immediately after a curetting, whether from the disturbance of the parts or the subsequent engorgement we cannot say; nevertheless the danger exists, as I have had personal experience.



Rhythmic uterine contractions.	Sometime but rarely to be made out at end of this period.	Never present	Never observed by writer.	Hydatid degeneration of chorion. Said to have been observed in small submucous myomata.
Fluctuation of fundus.	May be distinctly felt in thin subjects at the early part of this period.	Never present	Never present	A tressia of cervical canal with accumulation of fluid.
Hegar's sign, softening and thinning of lower uterine segment.	May be demonstrated by the 6th or 7th week in at least 80 pct.	Never demonstrated in any cases at any period.	Same.	Occasionally present in the absence of pregnancy or discoverable disease.
				A most valuable sign.
				This is a valuable confirmatory sign.

Curetting should therefore only be done, under circumstances pointing to tubal pregnancy, when the surroundings are such that an operation for removing the sac can be immediately done.

During the second month, however, even at the beginning, we do have several indications, not only of pregnancy, but that it is ectopic; or-regular, shreddy discharges instead of cessation of the menses in fifty per cent., a feeling of impending trouble, sharp unilateral pains of the stretched tube, enlargement of the uterus, coupled with absence of fluctuation at the fundus and of Hegar's sign.

It is said, and in part truly, that we have no opportunity to make these examinations, that the first intimation that the woman or the physician has is the pain and collapse of rupture. This we many times cannot help, yet in Minneapolis, from January 1, 1807, to June 1, 1898, there were 6,032 births recorded. During this time there were at least 20 operations for tubal pregnancy, or about .3 of 1 per cent. Abortions with undiscovered tubal pregnancies would probably keep the proportion about the same. From this it would seem to be the duty of the family physician to so educate his patients that on the first suspicion of pregnancy they will come to him for an examination. I believe that every case of suspended menses in married women formerly regular and all cases of supposed early abortion, when the embryo or part of the sac are not in evidence, should be made the subject of careful investigation for the purpose of locating the probable pregnancy. While fortunately we shall seldom make out an extrauterine gestation, we may very likely discover an interfering tumor or a retroflexion, and so be in a position to avert disaster to the mother or child.

Referring again to the table we find in the third month all the symptoms of early gestation well marked, when uterine. In fact, we lack only ballottement, foetal movements and foetal heart to make the diagnosis complete and positive. In tubal pregnancy we have that most important quartette of symptoms, enlarged uterus, absence of softening of the lower uterine segment, absence of fluctuation and a tender mass on one side of the uterus. I am of the opinion that if we have the opportunity to make an examination in the third month of ectopic gestation before rupture, we ought in a majority of cases to be able to come to a correct conclusion, except in the interstitial variety where the diagnosis is generally impossible. At this point we may say that gestation in an undeveloped horn of a uterus is to all intents and purposes an extrauterine pregnancy, because it is as likely to rupture, and more likely to rupture into the peritoneal cavity than a tubal gestation. When rupture has taken place, the diagnosis is nowadays promptly made in most cases. The sickening,

agonizing pain, the pallor, the rapid, weak pulse, with the history of pregnancy, are signs that all recognize. A slight rupture with a slow or intermittent hemorrhage is sometimes confusing. Contrary to what has been often stated without sufficient exactness, the effusion of blood, unless into the broad ligament, does not present a well defined limit on palpation. In other words, the extent of the bleeding cannot be determined by touch, but percussion will in general afford the needed information. A lateral sacculcation of the uterus in normal pregnancy is extremely hard to distinguish by touch alone from tubal gestation before rupture. The continuity of the uterine structure without a marked hiatus affords a not very conclusive means of diagnosis. The careful passage of the sound is considered justifiable by only a few authorities. Small ovarian cysts with amenorrhœa, pain and gastric symptoms have been mistaken for tubal pregnancy. The ovarian cyst has in general a less tension, slight if any tenderness, a more lively fluctuation, with greater mobility, and here (which is very important), there is no enlargement of the uterus. Myomata, retroflexions, salpingitis, pelvic cellulitis and lateral malignant disease have an essentially different history, course and constitutional symptoms, and do not often really enter into the discussion. We must remember that previous or chronic inflammations in the pelvis, by their attending fixation of the parts, tenderness, agglutination of organs and interference with any or all abdominal functions, may introduce perplexing features, but it is generally our carelessness rather than our actual difficulties which lies at the bottom of our errors. The best diagnostician has his thoughts upon, as well as a thorough knowledge of all diseases which simulate the one he is considering, and so the diagnosis of tubal pregnancy requires not only the thorough knowledge of its peculiar symptoms and of all the physiological and pathological conditions of the pelvic organs, but also a constant appreciation of the fact that tubal pregnancy may be present.

A few words only upon the symptoms of an extrauterine pregnancy when the rupture has taken place into the broad ligament. Here the shock of rupture is usually markedly less than in the abdominal variety, and all the blood being confined in a limited area, the whole extent of the hemorrhage may be determined both by touch and percussion, the mass is tender, early fluctuating, later boggy, and usually the tension is great. After the rupture with the foetus viable, the uterus is distinct from the foetal sac and relatively small and hard, the embryo with its sac is usually to one side of the median line. The coming on of false labor ends the life of the foetus and is a very important diagnostic sign.

Carcinoma of the lower abdomen and pedun-

culated myomata have been mistaken and operated upon for abdominal pregnancy. If the foetus is alive the foetal heart will, of course, after the fifth month settle the question; if dead, the diagnosis may even demand the exploratory incision. This brings me, in conclusion, to express the opinion that where a majority of the signs point to a tubal pregnancy, the patient is entitled to the benefit of a diagnostic incision. As a proof that this belief is well founded, let me call the attention of those of you who have operated in these cases to the fact that when you have made an exploration for supposed extrauterine pregnancy you have seldom found yourselves mistaken, and that when you were, you have always found some other abnormal condition which equally justified the operation.

### THE TREATMENT OF EXTRAUTERINE PREGNANCY.\*

By W. J. MAYO, M. D.,

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The treatment of extrauterine pregnancy is surgical, and it is the consensus of opinion that the operation should be performed in the majority of cases as soon as the diagnosis is made.

Looking backward over the history of the management of ectopic gestation, three distinct periods can be made out:

1st. The time previous to this century in which the whole subject was involved in mystery; a few cases wherein abscesses had formed and were incised and found to contain foetal remains comprised the sum total of surgical experience; the case of Bains in 1540 belonging to this category.

The almost forgotten writings of Bernutz and Goupil, however, bore some fruit, and in 1849, Harbert, and in 1864, Rogers, both Americans, recommended operation.

In 1875, Parry in his classical work on "Extrauterine Pregnancy" reported sixty-two cases with about fifty per cent. of successes.

The profession now began to wake up to the importance of the subject, and various measures of treatment were recommended, notably the use of morphia, in doses lethal to the foetus, introduced by Joulin, in 1863, and electricity, recommended by Voillemier about the same time, and which had extensive trial.

Other measures of equally doubtful utility were tried and likewise abandoned.

This second period of experimentation was brought to an abrupt close by the remarkable report of a remarkable man, Lawson Tait, pub-

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lished in 1887, and to his original paper but little can be added to this day.

The storm of opposition and abuse which Tait aroused during the next few years certainly drew the attention of the surgical world to the subject, but it soured and embittered a nature naturally pugnacious, and is responsible for some of the later vagaries of this benefactor of womankind.

For the purpose of treatment cases of extra-uterine pregnancy can be divided into two general groups: before the formation and attachment of the placenta in the fourth month and after this period.

In the first class the operation can be performed without regard to the foetus and placenta. In the second class, the importance of these two factors can not be overestimated.

The diagnosis previous to rupture has seldom been made, although Herman, of London, and Hirst, of Philadelphia, have recorded some cases. If this, fortunately, should be the case, early removal of the diseased tube, with or without the corresponding ovary, can be safely effected.

After rupture the operation will be to check the active hemorrhage which permits of no delay, or the removal of an accumulation of blood clot with the diseased tube to prevent further bleeding.

The extent and rapidity of the hemorrhage depends somewhat upon the location of the rupture in the tube; the nearer to the fimbriated extremity, the greater the chance of temporary clotting, and this particularly applies to tubal abortions.

Price says that cases of rupture at the uterine end of the tube go to the undertaker, in the outer part of the tube to the surgeon, and the middle portion is debatable ground.

The character of the operation depends upon the condition of the patient. If bleeding is active at the time the diagnosis is made, the operation is as imperative as the ligation of any other bleeding vessel, and it is surprising to note the recovery of patients, apparently almost moribund from shock and hemorrhage, after rapid removal of the diseased tube and blood clots.

It sometimes happens that an immediate operation can not be performed; under such circumstances the foot of the bed should be elevated into a high Trendelenberg position, to diminish pelvic blood pressure and to maintain circulation in the vital organs. In this position, as shown by Clark, absorption is most active, especially by the diaphragmatic peritoneum, and the effused blood will be most readily reabsorbed. It should not be forgotten that the depression of the circulation and faint condition lessens arterial tension and favors clotting, therefore, as Fothergill points out, stimulation beyond the absolute necessity for life is not indi-

cated unless operation is at once performed and the bleeding vessels secured. In this manner I have twice tided patients through a collapse, and after reaction operated in the usual manner.

The abdominal route will be practically always chosen for this operation if active hemorrhage is present or has been recent, as it permits of more accurate work.

Kelly has advocated removal and drainage through the vagina if there is well marked encapsulation of the blood clot. In one or two of his cases Kelly was compelled to open the abdomen and tie the bleeding vessels which the manipulations from below had caused to start up, and which the gauze packing had failed to check.

There is one class of cases in which vaginal section is indicated rather than the abdominal operation. That is where the hæmatocele resulting from the rupture of the gestation sack has become infected. This may occur in patients in whom the foetus is dead and the vessels are occluded through natural processes, the infection supervening before absorption is complete. In three such cases I have found the vaginal operation simple, safe and satisfactory. The collection will usually be in Douglas' pouch.

The method I have employed of opening these and similar pelvic accumulations through the vagina has been to grasp the posterior lip of the cervix with bullet forceps and have an assistant gently steady the uterus. The middle finger of the left hand is covered with a well oiled condom and inserted into the rectum, and the index finger of the same hand in the vagina, the perineum being between the fingers. The uterus, steadied with the tenaculum, marks the anterior boundary, the finger in the rectum the posterior boundary, and the index finger acts as a guide to the base.

With a pair of curved, sharp scissors the pocket can be opened and drained with gauze, as advised by A. W. Abbott, or if the walls are very rigid a rubber tube can be sutured to the vaginal wall as practised by Archibald MacLaren.

In the abdominal operation, if the hemorrhage has been recent, on reaching the peritoneum it will look dark or black from the effused blood behind it.

After incision no time should be lost in tying off the broad ligament and removing the tube and its contents, beginning, if most convenient, from the uterine side; the ovary, if healthy, should not be removed.

The clots are rapidly scooped out with as much of the sack wall as can be conveniently loosened, the toilet of the peritoneum being more or less complete as the condition of the patient permits. If there is no infection, too much time need not be spent in this regard and

the abdomen should be closed without irrigation or drainage.

If the blood loss is great, saline solution may be left in the abdominal cavity and in addition intravenous or subcutaneous cellular transfusion be performed. If the indications are not acute rectal enemata of one or two pints of saline solution will answer the purpose.

Should there be a doubt as to the sterility of the blood accumulation, free drainage with gauze, either through the vagina or abdomen, is indicated.

Excessive hemorrhage after ligation of the ovarian vessels on the affected side seldom occurs previous to the fourth month; hot sponge pressure will usually check the oozing; should this fail, gauze packing after the plan of Mikulicz is an admirable method.

It is the rule in these cases that the ovaries are not diseased and they should not be needlessly sacrificed. I have noticed with regret a tendency on the part of some surgeons to remove both ovaries and tubes in operations for ectopic gestation, first on account of the adhesions (which will soon disappear), and second to prevent that rare accident in which at a later date tubal pregnancy occurs on the remaining side. I have had one case in which this happened, requiring removal thirteen months after the first operation. The frequency of tubal pregnancy and the rarity with which it afterward develops in the remaining tube is too well known to require discussion, and I have had two patients upon whom I have operated for extrauterine pregnancy, who have afterward raised one or more children without difficulty.

A great many cases of extrauterine pregnancy become self cured, developing a pelvic hæmatocele which is gradually absorbed; this fortunate termination should not lead us to place reliance on expectant treatment, however, excepting in a small minority of cases seen, when the dangers have been successfully run, a well encapsulated blood clot only remaining for nature to dispose of.

The treatment after the fourth month depends on whether the child is alive or dead. If alive, it is a question which must be settled upon its own merits; delay to term gives the child a chance but increases the danger to the mother.

In a number of cases which have gone to term very few living children have been the result, of these few offspring the percentage of defectives has been enormous and at the end of a year the number remaining alive is so small as to make a thoughtful man wonder if it is worth the increased mortality of the mothers.

My own feeling is that if the mother is in good condition and the indications are that the foetus is vigorous the child should be considered and operation performed at or near term.

As to how the operation should be conducted is not settled. Tait says that the secret of success is to avoid the placenta, suturing the sack to the incision and providing free drainage.

August Martin and Olshausen advise removing the placenta and membranes if possible. In my limited experience I have twice operated upon extrauterine gestations some time after the development of a placenta, both late in the fifth month, and while the foetus was dead a short time in each case, the placental circulation was still complete. In both instances I removed the placenta and membranes at once and in each the hemorrhage was terrific. One was checked by firm gauze packing and in the second I was compelled to do hysterectomy to control the hemorrhage.

Werder has directed attention to the fact that the bleeding is from the uterine artery as well as the ovarian, in these more advanced cases. In another case operated upon during the fourth month, ligation of the ovarian and uterine vessels on the affected side enabled me to remove the foetus, placenta and membranes with a minimum amount of hemorrhage.

In operating between the fourth month and term, the preliminary ligation of these vessels in favorable cases, might enable the surgeon to make clean work, trusting to ordinary surgical measures to control the hemorrhage from the intestines, mesentery or other parts involved.

After the foetus has been dead for some time the vessels of the placenta become occluded and complete work can usually be done.

Herman believes that, occasionally, the placenta may grow after the death of the foetus. Sutton, a most careful observer does not agree with this view. Certainly in some cases, circulation is maintained for weeks after the death of the child. Each case must be managed on its individual merits, and the desire of the surgeon to do clean and thorough work must be modified by existing circumstances.

In one case after opening the abdomen and viewing the situation, the thickness of the sack wall and the signs of recent peritonitis led me to close the abdominal incision and open up through the vagina, removing in this way a putrescent mass of foetal remains and placenta.

Death of the child at or near term with encapsulation of the entire product has occasionally occurred, requiring operation months or even years later. In one case twelve years after the prolonged illness which gave rise to a tumor, I removed a considerable part of a foetal skeleton.

In this brief paper I have made no separate mention of the small class of cases in which the rupture is into the broad ligament, as it does not modify the treatment to any extent.

My own experience comprises thirty-one



operations for extrauterine pregnancy; all of the patients recovered.

This relatively small number of operations has been performed as a general surgeon rather than as a specialist in gynæcology, but as a result of my observations in no branch of our art will surgical principles prove more valuable, and these ordinary measures can be readily adapted to meet the extraordinary variety of conditions which are found at the operating table.

#### CASES SUITABLE FOR VAGINAL SECTION.\*

BY DR. ARCHIBALD McLAREN, M. D.,  
St. Paul.

Vaginal section has been under intelligent trial for the past three years, and we are, I now believe, in a position to formulate some rules for the employment of this method, and to decide which are the suitable and which are the unsuitable cases for this form of treatment, as opposed to the older method of abdominal section. A few enthusiasts would fain make us believe, that in this procedure lies the solution of all pelvic diseases, while on the other hand a few of the best gynæcological surgeons take the position that this procedure is never justifiable.

In looking over this subject together, I am sure that we shall conclude that the solution of this question, as of so many medical and surgical problems, lies unquestionably between these two extremes. Taking up the various pathological conditions for which vaginal section has been lately suggested, I shall in this short paper simply enumerate them, giving my own personal experience and the opinion formed as the result of that experience.

**Non-suppurative cases:** Under this heading, I would include, first, cases operated upon for the separation of pelvic adhesions, not associated with diseased appendages; such cases are rare, some of them are tubercular. Vaginal section in these cases has given me just as satisfactory results as abdominal section, especially in tubercular cases; still from my experience I should advise that they can be more intelligently dealt with from above.

The second class of cases, adherent, retro-displaced uteri, usually combined with adherent and diseased appendages, treated by vaginal section has not proven in my hands to be at all satisfactory, as it is usually impossible to entirely separate the adhesions about the uterus and appendages. It is extremely difficult to remove the appendages through the vagina, and although the adhesions may be separated, they usually quickly reform and the patient is as badly off as ever. In this class, as in all old inflammatory cases, where, following a past acute inflammation, the pus germs have more or less run

out, leaving adherent tubo-ovarian, inflammatory cysts and inflammatory ovarian tumors, should, I believe, not be subjected to simple vaginal section. The accumulations of fluid in such cases are small and they cannot be safely reached and drained from below. Such appendages are still irritating to the peritoneum, as is shown by the dense adhesions which surround them. So that I am inclined to believe, with Dr. Mayo, that it is frequently wiser in this class of cases to do a vaginal hysterectomy, than to attempt any ordinary intraperitoneal conservative operation.

As I have said above, the removal of these old inflammatory appendages through the vagina is very difficult, principally on account of the difficulty in applying the ligatures about the stump, deep in the pelvis. Dr. Dudley when discussing this subject before this Society two years ago reported a death from secondary hemorrhage following the removal of such an appendage, and since that time I have also had a death from the same cause. Dr. Dudley then said, "it is wonderful how much experience an operator can get from a single fatal case of hemorrhage."

A subperitoneal fibroid from the posterior surface of the uterus, especially if low down in the cul de sac, may occasionally be removed through the vagina with advantage. Occasionally a broad ligament cyst may be opened up and removed or successfully drained through the vagina, but as a rule, my experience would lead me to believe that almost all of these cases should be opened up from above and not from below. Concerning non-suppurative extrauterine gestation cases, I would abide by this same rule as just laid down. If we were to operate upon a case of suspected extrauterine gestation before rupture, where the diagnosis would necessarily be more or less uncertain, I should certainly operate from above. If the extrauterine case has ruptured and the woman is still bleeding, we can more certainly and more quickly reach the bleeding point and secure it from above than we can from below, where it would be necessary to rely almost entirely upon the gauze packing.

Dr. Howard Kelley read a paper before the American Medical Association at the Atlanta meeting, reporting thirteen cases of extrauterine gestation, operated upon by vaginal section with gauze packing and drainage; all thirteen of these cases recovered. Dr. E. W. Ashton, of Philadelphia, later reported before the Philadelphia Obstetrical Society that one of these cases of Dr. Kelley's died. One of the few cases of extrauterine gestation which I have operated upon through the vagina was so desperately sick following the operation and made such a tedious recovery, that I have abandoned this mode of procedure, as a rule.

The only time when I should feel that it were better to operate through the vagina, would be

\*Read in the Section of Gynæcology of the Minnesota State Medical Society, June 17, 1898.

in an extrauterine gestation case after the rupture, when the bleeding had ceased with the formation of a pelvic hæmatoma or hæmatocele, if in such a condition I felt that the case was approaching the suppurative line or if adhesions had formed above the pelvic hæmatoma, because the very presence of these adhesions would go to prove that the clot was irritating to the peritoneum; then I should open and drain from below, for my experience in these cases has proven to me that they are occasionally very actively septic, without undergoing any change which the eye can appreciate. Of course when the case has gone to suppuration they offer the most brilliant field for vaginal section and drainage. Two cases which I have had under my observation for the last two years following such an operation remain perfectly cured up to the present time. The Fallopian tube, which is perhaps diseased in both of these cases, has never given the slightest trouble.

In taking up the suppurative cases we may find any one or a combination of the following pathological conditions present: First, intra-peritoneal abscesses, where the appendages are apparently not diseased. Second, pus tubes or tubo-ovarian abscesses. Third, suppurating ovarians. Fourth, abscesses of the broad ligament with no apparent disease of the appendages.

In this list are comprised the cases which to my mind are most suitable for vaginal section and drainage, when the amount of pus exceeds approximately four ounces in quantity.

In small tubo-ovarian abscesses it is frequently too difficult to reach the abscess cavity, particularly if the abscess does not lie in Douglas' cul de sac. When the abscess lies more at the side of the uterus or is adherent to the side of the pelvis, vaginal section will frequently fail to reach the pus, and here it will prove much safer to reach the abscess through an abdominal incision.

The first question which naturally arises in considering this subject is, can our results following cœliotomy for the treatment of these conditions be improved upon? To answer this question we must decide what the mortality of abdominal section is, in the class of cases which we would now consider suitable for vaginal section.

Dr. Hank, of New York, in discussing this subject some time ago, said that he believed that the mortality of bad pus cases operated upon through the abdomen was twenty or thirty per cent. Dr. Noble, of Philadelphia, in the Atlanta meeting of the American Medical Association said that he believed that the mortality in the worst forms of pelvic suppuration to be twenty-five per cent. Dr. Haggard, ex-house physician at the Women's Hospital of New York, collected statistics in five metropolitan hospitals of New York and Baltimore and found a mortality

in this class of cases of 18 per cent. Dr. Tabor Johnson, of Washington, in a paper read before the Philadelphia Obstetrical and Gynæcological Society, said that the mortality in his opinion was very heavy in the worst forms of pelvic suppuration, when treated by laparotomy. Two years ago I read a paper on this same subject, before this same section at Minneapolis. In that paper I made a statement that my mortality in this class of cases operated upon through the abdomen was seventeen per cent. My mortality, however, for all pus cases combining the small accumulations with the large, was, during this same time only seven per cent.

It almost seems at this date that there can be no question about this method of treating large accumulations of pelvic pus, as above stated, but a report of a discussion of this subject before the Philadelphia Obstetrical and Gynæcological Society, some three months ago, shows that there is a very strong opposition in some quarters. Dr. Baldy, of Philadelphia, says that he believes that vaginal section will soon die out, excepting in acute or chronic accumulations of pus in the pelvis, outside of the tubes and ovaries. He also says, "It is absurd to discuss the simple opening of an abscess in comparison with abdominal section for the removal of actually diseased parts." Again he says, "If I send my patient to bed in a half hour to an hour, and feel that there is no septic pus present, I am sure of her recovery, but I look with confidence for the patient to die if the pus is virulently septic." In regard to the mortality following abdominal operations, Dr. Baldy further says, "I cannot think of a single pus case, barring those desperately acute puerperal ones operated upon to save immediate death, which has died in my practice in the last five years." Dr. W. E. Ashton, of Philadelphia, at this same meeting said that in his opinion the shock following abdominal operation for tubo-ovarian abscesses depends upon the dexterity of the operator, and death upon the sterility or virulency of the pus, as he says, "If the pus is not sterile, nothing in the world will save the patient."

Let us look for a moment at the statement made by these two eminent physicians. My answer to Dr. Baldy would be that the cases which we have principally under discussion are those same desperate puerperal cases, which my experience proves are extremely fatal when operated upon through the abdomen, and in which a very much greater proportion can be saved if they be subjected to the much simpler operation of vaginal section and drainage, no attempt being made at the primary operation to remove the tubo-ovarian sac.

In regard to the danger due to the septic character of the pus, I agree with both of these gentlemen when the abscess is attacked from the

peritoneal cavity; but I have proven to myself both clinically and from an immediate staining of the pus at the time of the operation, that those cases which contain virulent pus in the tubes and ovaries can be almost as safely treated with vaginal drainage as the ones in which the pus is sterile. In regard to the skill it necessitates, I agree with Dr. Ground, of West Superior, when he says that he believes that it requires almost as much skill to operate upon many of these cases through the vagina as it requires for an abdominal operation.

In the last three years I have operated upon seventeen pus tubes through the vagina, simply opening them and using a soft rubber drainage tube, and have seen them all recover, with one exception; there was one death. In this case I opened through the vagina a right pus tube, lying in Douglas' cul de sac, containing two and a half ounces of pus; this girl died on the second day, and an autopsy disclosed the fact that a small tubo-ovarian abscess of the other side containing about two teaspoonfulls of pus had produced a septic peritonitis; there was no connection between the free peritoneum and the vaginal wound. This case was perhaps ruptured by the bimanual palpation made at the time of the operation. Although she was a desperately sick woman with a pulse of 130 and temperature of 105°, perhaps she might have been saved if the operation had been done from above. I have operated upon ten cases of intraperitoneal abscesses where I have not been able to demonstrate to myself the presence of a tubo-ovarian abscess. In two cases I have opened a pus tube through an inflammatory ovarian cyst, draining the pus tube through the cyst cavity. Both of these patients rapidly recovered.

During this same time I have operated upon seventeen suppurating ovarian cysts. Nearly all of these foregoing cases I have been able to keep under observation and to follow their subsequent history, and so far with all the information at hand I can truthfully say, that as a class they have had much less after disturbance, much less pain and distress than any similar number of abdominal cases where the appendages have been removed for similar conditions, and more than that, these women have not had their appendages removed, which is a great satisfaction to a great number of them. In these forty-four bad pus cases there has been only one death from any cause, although the most of them were profoundly septic and in a most deplorable condition. I have up to the present time only found it necessary to perform a secondary operation four times. In these four cases I have found the adhesions very dense and firm, and one of these cases died from the secondary laparotomy.

I have operated upon six cases of tubercular disease of the appendages, which I have been able

to distinguish from the ordinary suppurative ones; all recovered from the operation; but one case died some time after the operation from extension of the disease to the lungs.

I have operated upon four extrauterine gestation cases, two suppurating, two non-suppurating, all of whom have recovered.

I have operated upon four cases of true pelvic cellulitis, one of which died from a general septic condition, the others making a prompt recovery.

I notice that a great many operators advise the use of gauze for vaginal drainage. I am sure that the rubber tube will give much better satisfaction, for the drainage is better and the patient is saved the suffering caused by the removal and repacking of the sinus. Most of my friends have told me that after the use of gauze it is very frequently necessary to reopen the drainage track; which I have never found necessary. My plan is to introduce a large sized rubber drainage tube and leave it in place for about three weeks. Few of these cases will discharge pus from the drainage track longer than this. If they discharge for a longer period of time they have almost always proved to be tubercular in character.

#### NOTE.

##### HISTORIES OF A FEW TYPICAL CASES.

Case No. I. Mrs. B., of St. Paul, has been married ten years, and wishing to conceive I dilated the uterus on the twenty-second of February, 1894. This was followed by no practical results so far as conception was concerned. Her health was perfect until sixteen months later, when I discovered a tubo-ovarian abscess of the left appendage as large as a Florida orange. The abscess was opened through Douglas' cul de sac with scissors and blunt dissection. I evacuated at least one-half pint of thick pus without opening the free peritoneal cavity; I introduced a large rubber drainage tube, stitching it into the cavity; this tube was left in six days, and was then removed on account of the constant colicky pains, due, I believe, to the contraction of the Fallopian tube upon the end of the drain. The cavity was thereafter drained with gauze for several days. I saw this patient a few days ago. She reports herself as never better in her life. The left appendage is slightly thickened, but neither a painful nor a dangerous organ.

Case No. II. Mrs. S., of West St. Paul, sent to me by Dr. Hartwell Johnson, of St. Paul. Patient was 30 years of age; never had conceived. She had a constant temperature ranging between 101° and 103°, pulse 130. She was operated upon at St. Luke's Hospital, October 19, 1895. I found a large, suppurating ovarian cyst containing a quart of offensive pus. This was opened through the cul de sac, washed out with sterilized water and drained with a large sized rubber tube.

The pus sac was not removed. The patient made a prompt recovery, left the hospital in three weeks' time and remains perfectly well up to the present time.

Case No. III. Mrs. S. S., seen in consultation with Dr. C. A. Wheaton, of St. Paul. Patient 40 years old; had been married five years and never had conceived. The patient was operated upon at her home, July 16, 1895. Three months before this operation this patient had gone over her menstrual period two weeks. This was followed by sharp pelvic pains and by continuous hemorrhage. She was thin and hectic. Vaginal section and the opening of Douglas' cul de sac allowed the discharge of at least a quart of very offensive pus, filled with broken down particles of blood clot and placenta tissue. The cavity was then drained with a large sized rubber tube. One month later this patient left for her country residence. On the tenth of October last I examined her and found a small, movable uterus; on its right a hard nodule as large as a hen's egg. This patient has no pelvic pain, and is, to all appearances, perfectly cured.

Case No. IV. Mrs. W., seen with Dr. Park Ritchie, of St. Paul. When first seen this patient had just been delivered by Dr. Ritchie of a six month's foetus. This delivery was immediately followed by a very acute attack of pelvic peritonitis, due, as we believed, to the rupture of an old pus tube. On December 3, 1895, I opened a large, intraperitoneal pelvic abscess, which contained at least two pints of very offensive pus. This patient's recovery was somewhat tedious, but her condition is now excellent.

## MISCELLANY.

### Renal Insufficiency.

Dr. Campbell says, in the Denver Medical Times, the chief sources of auto-infection are the tissues, the secreting organs, food and putrefaction. All the excretions contain poison—faeces, urine, bile, carbonic acid and sweat are poisonous. Among these we find ammonia compounds, biliary acids, indol, phenol, skatol and urea, which, next to carbonic acid, is the most important excrementitious matter. Even the blood is toxic, for it is continuously being traversed by a current of toxic material. In health the elimination of urea is incessant. It is said that if its excretion is interfered with so that it becomes two and one-half times greater than its normal quantity, it will produce death. Very many persons suffer greatly from renal insufficiency and properly selected diuretics will relieve many of their symptoms. Urine is composed of water and certain solids dissolved in it; the amount of solids are proportionate to nor-

mal body weight. This, Bouchard, throughout his numberless experiments, has recounted many curious facts concerning the toxicity of urine. The poisonous action of urine excreted by day during the period of cerebral activity produces a different effect from that excreted during sleep. Day urine is more poisonous than night urine, it causes convulsions. Night urine causes coma. Man elaborates two and one-fourth times less poison during sleep than during an equal time of cerebral activity. Transfusion of urine lowers temperature. We often encounter subnormal temperatures in patients with renal insufficiency. Depressed temperature retards tissue-metamorphosis which, in turn, increases auto-infection. We further learn by his experiments that urea, the coloring and other organic substances supply two-thirds and potassium salts one-third of the total toxicity of urine. In describing the action of these poisons on the various tissues and organs, the nervous system seems to suffer first and most severely. Long before coma or convulsions are seen an interesting array of minor nervous manifestations must necessarily exist. Next to the nervous system would come serous membranes. Other tissues may be invaded by urinary solids, and I suppose are. To decide this, positively, would involve a chemical analysis of the tissues presenting symptoms that may be alleged to arise from urine poisoning, and that has not been done so far as my reading extends, but as diuretics increase the amount of solids excreted and at the urgent symptoms subsiding this would seem to indicate that they are called in from the tissues that do not contain them normally.

Dr. L. Remfrey, in a paper read before the Obstetrical Society, London, concludes as follows: (1) Of nursing women, fifty-seven per cent. only have absolute amenorrhoea. (2) Forty-three menstruate more or less, but twenty per cent. have absolute regularity. (3) Impregnation does not take place so readily during lactation as at other times, but this is not true to such an extent as has been imagined. (4) If absolute amenorrhoea is present during lactation, the chances of impregnation occurring are only six out of one hundred. (5) If menstruation occurs during lactation, the chances are sixty in one hundred. (6) The more regular a woman is during lactation the more likely is she to become pregnant. During a menstruating lactation the changes in the uterus are presumably similar to those connected with the ordinary monthly periods, and the mucous membrane forms a nidus for the ovum. (8) In the woman who does not suckle at all, the menses appear, as a rule, some time in the first six weeks after delivery.—N. Y. Medical Record.

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**JANUARY 1, 1899.****THE MORPHINE HABIT.**

Perhaps because the unfortunate victims of opium go to special institutions for treatment rather than to their regular physician, the subject of chronic poisoning by morphine finds but little consideration in general works on medicine. A work as full and complete as that of Osler gives but a page to the subject, while some other writers, for instance, Flint in this country and Niemeyer in Germany, make no separate mention of it. In fact, it is necessary to look rather outside of the main sources of medical information to find anything like a full and complete account of this condition, although it is one that has long been common to meet with, and one that unfortunately appears to be growing more and more common every day.

According to Brunton the disastrous effects of the opium habit are due not so much to the bad qualities of the drug as to the peculiarities of the Caucasian constitution with which opium fails to agree, while to the Mongolian race it is, he says, a great boon. He compares it to alcoholic drinks in this regard and says: "In this country you will find thousands of men, or tens of thousands, who take their glass of beer or wine twice or thrice a day, and never exceed, and never wish to exceed it; they feel all the better for it and probably are all the better for it. In China or India you find men who take their opium in precisely the same way; they take a

small quantity twice or thrice a day, they feel the better for it and they never want to exceed it." He goes on to say that we hear a great deal about the opium slaves and the opium dens of China, but little of the moderate users of the drug, just as we hear much about the drunkards but little of the temperate users of alcohol, who outnumber the intemperate many fold. But if the two habits should change places and opium come here while alcohol went to China the damage would be enormous.

Fortunately there is little probability that opium will come to be used in this country as alcohol is. The victims of the habit are as a rule introduced to the drug as a medicine and get into its clutches unawares. It is to be regretted that this evil state of affairs comes about too often through the carelessness or indifference of the physician. In France it is somewhat different. There the use of morphine is taken up not only by people who are endeavoring to avoid pain but also by many who are seeking for pleasure or endeavoring to drown care or sorrow. In general the drug finds its victims among those whose nervous organization is highly developed and whose mental processes are active rather than among those whose brains are sluggish. Where the doctor is responsible for the development of the habit the use of the drug has usually been continued by the patient after medical attendance has ceased. Lyman says that the habit may become well fixed in from six to eight months.

The beginning of the use of morphia is attended by most agreeable sensations. This period, called by the French "the honey-moon of the morphia habit," is short lived, and it is often in order to try to call back the lost pleasure that the morphine user increases his dose, the vain attempt leading him on from one step to another until often enormous doses are reached, sometimes amounting to a drachm or even in rare instances to three drachms of morphia a day; the average user, however, does not go above a daily dose of ten to fifteen grains.

The train of symptoms that follows the establishment of the morphia habit is well known. The nervous system naturally is the chief sufferer, the memory, the will and the moral sense declining rapidly; there is no more striking characteristic of the morphine victim than the shame-

less way in which he will lie, particularly in matters connected with his habit, while there is almost no crime he is not ready to commit in order to supply himself with the drug. Sleeplessness or sometime extreme drowsiness, loss of acuteness of the senses of sight, taste and hearing, various phenomena of anæsthesia and hyperæsthesia, hallucinations, sometimes choreiform movements, these are some among the many nervous manifestations whose whole range includes almost all the morbid phenomena exhibited by the nervous system. The digestive organs show the influence of the drug by loss of appetite, nausea, vomiting, obstinate constipation, or rarely diarrhœa. The nutrition suffers; the body wastes and there occurs a curious painless decay of the teeth, particularly of the bicuspid on the grinding surface. There is a general decrease of the mucous secretion which affects urination, causing dysuria, sometimes painful and sometimes not, occasionally with vesical or urethral spasm. Sexual potency is rapidly lost and in women amenorrhœa soon appears. If parturition occurs in a victim of morphia the child soon after birth often shows symptoms similar to those of the habitué deprived of the drug, and sometimes dies in a collapse. Its best treatment would be to nurse the mother, but unfortunately the mother seldom has any milk.

As it is almost impossible to treat the morphia habit successfully outside of a sanitarium the general practitioner sees but little of this side of the subject. The question of sudden or gradual withdrawal of the drug is still much discussed, and will probably never be settled, for the reason that there is no invariable rule to follow. To get rid of the morphia is the main thing, and diet and supporting drugs like strychnina are merely adjuvants. No cure can be depended upon that has not lasted at least two years.

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#### NOTES.

##### Notice to Subscribers.

If our subscribers will examine their files of *The Lancet*, and give us the dates of any missing numbers, we shall be pleased to supply the same without charge. We can furnish a few copies of all back numbers for several years.

#### Tablet Nervitone.

Messrs. Wm. R. Warner & Co., of Philadelphia, recommend very highly their Tablet Nervitone for conditions due to asthenia, neurasthenia and nerve exhaustion; and the formula, which they give in their announcement on another page, is certainly an excellent one. There are few pharmaceutical manufacturers in either America or Europe who have so fully the confidence of the medical profession as Messrs. Warner & Co., and they have enjoyed this confidence so many years that a new preparation recommended by them is well introduced.

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By the use of Tongaline in the treatment of grippe, all the disagreeable symptoms rapidly disappear and the general lack of tone, which is an unfailing accompaniment, is corrected, the nervous and pulmonary systems are re-enforced, and exhibit no weak points to be attacked after the disappearance of the disease.

#### Gray's Glycerine Tonic Compound.

The representative of the Purdue Manufacturing Co., who was recently in the Northwest on his annual visit, expressed his great pleasure over the reception given him by our leading physicians, as well as over the fact that many of them are now using his preparation very extensively.

It is a very pleasant tonic, and a very efficacious one, as its formula indicates, its components being glycerine, sherry wine, gentian, taraxacum, phosphoric acid, carminatives. It is recommended especially for the almost universal catarrhal conditions that now prevail throughout the country as a result of weather conditions.

#### Cleanse the Passages.

"In the treatment of hypertrophic rhinitis do not forget to cleanse the passages; this is the fundamental principle of successful treatment, and as such a saline solution, such as glycothymoline (Kress), is practically the best remedy for the purpose. It cleanses and it heals, it causes a proper degree of healthy stimulation, it acts as an antiseptic and is a most efficient deodorizer."—*Journal of the American Medical Association* for October 24, 1896.

## ORIGINAL ARTICLES.

## THE ESTIMATION OF THE LEUCOCYTES OF THE BLOOD AS AN AID IN THE DIAGNOSIS OF DISEASES OF CHILDREN.\*

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A study of the blood of adults suffering with disease has revealed the fact that in certain pathological conditions the leucocytes are much increased beyond the normal limits, and in other conditions diminished, while in a third class the count is normal.

So constant and characteristic have these counts been found to be, that the estimation of the number of white cells in the circulating blood has become a valuable procedure in assisting to determine the disease with which the diagnostician is dealing, and as a means of differentiating between it and other simulating pathological conditions.

By a count of the leucocytes of the blood, the clinician possesses a new objective symptom, which materially assists in establishing the identity of the disease.

To a much more limited degree this procedure has been utilized in the diagnosis of diseases of children. But the difficulty in securing the blood from such young patients and the suspicion that knowledge so secured might be unreliable and lead to false conclusions, owing to the variability of the white count in the early years of life, has served to prevent the use of this procedure to any marked degree in the clinical diagnosis of this class of diseases.

The experience of the writer with the use of the white blood count in such patients does not bear out the general impression that the procedure is unreliable. But on the other hand, he is convinced that in general the leucocyte counts in the blood of children affected with certain diseases are as characteristic and fixed as in diseases of adult life; and that if the clinician is familiar with the facts and is careful to eliminate errors, as definite conclusions can be drawn from these counts as in the diagnosis of the diseases of adult life.

With a view to directing your attention to this procedure as an aid in the diagnosis of children's diseases, this paper has been written.

\*Read in the Section of Obstetrics and Diseases of Children of the Minnesota State Medical Society, June 17, 1898.

Leucocytes are present in the circulating blood of children in greater numbers than in the blood of adults. The blood of an infant at birth will count from 17,000 to 21,000 white cells to the c. m. m. That of a baby of six months, 12,000; a child of one year, 10,000; one of four years, 9,000; while from six years onward the leucocyte count is practically that of adult life, namely 7,500 white cells to the c. m. m.

The increase of the white cells in infancy and early childhood is explained by one authority on the grounds of a greater concentration of the blood coupled with a large digestion leucocytosis.

Whether this is the true explanation has not so far been absolutely determined. It is certain however that this increase of the white cells in late embryonic life and in infancy over the number present in the blood of adults led to the assumption that the white cells of the blood were the progenitors of the red corpuscles; an erroneous theory without any well founded proof, which is taught by a few even to the present day and still holds a place in some of our modern text-books.

As in adult life the number of white blood cells may be increased or decreased beyond the normal limits, so in children certain physiological and pathological forces may augment or diminish the number of leucocytes circulating in the blood. There is, however, this difference to be noted: The changes in the number of leucocytes so produced are much more pronounced in children and seem to be occasioned by causes more trivial in their nature. Take, for example, the leucocytosis of digestion. In the adult the white blood count is rarely increased more than 2-3,000 white cells following a meal, while in children and young infants a digestion leucocytosis of five thousand is not unusual.

In diseased conditions as well the number of leucocytes in the circulating blood of children shows more pronounced changes than in the blood of adults.

In the disease typhoid fever this is well exemplified. Here the diminution in the number of white cells is more marked and more invariable than the leucopenia of typhoid fever in adults.

What forces act to bring about this increase or diminution in the white cells of the blood is not apparent, nor is it at all certain that the same force acts in all cases to produce the leucocyte change.

Virchow and Ehrlich explain leucocytosis on the supposition that a stimulation of the blood making organs takes place which occasions an overproduction of white cells. Lowit holds to

the view that there is a regeneration of new cells from the older forms. Buchner and Romer describe the process as two fold. First, a stimulation of the blood making organs to a production of new cells, and second the action of bacterial proteins circulating in the blood calling out other leucocytes from the spleen and lymph nodes into the general circulation, while Goldschneider, Vom Limbeck and Jakob hold to the view that there is no actual manufacture of new white cells in the phenomenon of leucocytosis, but that the whole process is one of chemiotoxicity. That is the white cells lying in the spleen, lymph nodes and lymph spaces are attracted into the circulation through the influence of the bacterial toxins carried in the blood, and that these leucocytes added to those already in the blood stream cause the higher white blood count and the phenomenon known as leucocytosis.

To explain the diminution in the number of leucocytes in the blood two theories have recognition:

One that of Lowit, conceiving the process to be essentially a cell destruction, the other that of Schultz, Goldschneider and Jakob, who hold that there is no actual destruction of white cells but that the decrease is caused by an exodus of leucocytes from the circulating blood into some of the organs and tissues of the body. But in whatever way we explain these phenomena we know that they exist, and that under certain conditions the white cells of the blood may be increased or decreased beyond the normal limits. Some of these conditions are physiological, such as the leucocytoses of digestion, cold baths, exercise and the like; others are pathological such as the leucocytoses of pneumonia, rheumatism, the septic processes, or the leucopenia of tuberculosis, typhoid fever and la grippe. The physiological leucocytoses are of importance in clinical medicine because the clinician in making white counts and drawing conclusions therefrom should be careful to exclude increased white counts from such causes. It is however in the pathological conditions causing increased white blood counts that our interest centers, and to these your attention is directed.

Before proceeding to detail cases illustrative of the value of the procedure, let us review the facts known concerning leucocyte counts in diseases of children. Of course it must be borne in mind that this subject has not been as thoroughly investigated in children as in adults.

The number of cases in which counts have been made is not nearly so large and the leucocyte counts for each disease are not as definitely fixed. Still enough has been done to warrant some definite statements from which some general conclusions can be drawn.

The presence of a pyæmic infection in the body is usually followed by a well marked leucocytosis.

This holds true whether the point of infection be a furuncle on the neck, the chamber of the middle ear or the abdominal cavity about a diseased appendix. The leucocytosis thus produced is well marked, rarely falls below 20,000 white corpuscles to the c. m. m. and is constant enough to be of great diagnostic value when the question of septic infection arises.

Rare exceptions are met with where the pyæmic process is of long standing and the pus well walled off from surrounding structures, or where the inflammation is most violent and speedily ends in death.

The former condition is seldom met with in children. In the latter condition the white count is of value in prognosis when the diagnosis is known.

Take for example otitis media. The physician is often in doubt as to whether the inflammation in the middle ear has gone on to suppuration or is only catarrhal in character. If the process be catarrhal a leucocytosis rarely exists; if pus has formed the leucocyte count will reach 20-30,000 white cells to the c. m. m.

See Case I, as illustrative of the value of a leucocyte count in establishing aright the pathological condition in otitis media.

In the disease appendicitis, the leucocyte count is slightly increased if the process is catarrhal, but if the inflammation has gone on to suppuration and pus has formed a well marked increase of the white cells will be encountered. This knowledge is of value in determining whether pus is or is not present in an inflammation of the appendix.

Also by repeated counts the clinician is able to follow the course of the inflammation from day to day and to determine whether the process is spreading and involving new areas or whether the cell forces have gained the mastery and the inflammation has become localized.

Thus for example in Case V. the white count on the first day was 19,000, the second day 22,000, the third day 19,000, the fourth day 14,000, all without any marked change in the symptoms, and yet operation in this case was deferred because of the diminishing leucocytosis. The boy recovered.

A leucocyte count in appendicitis is likewise of value in the differential diagnosis between it and other stimulating affections such as typhoid fever or acute obstruction.

In Case II the question arose: Is this a case of typhoid fever or appendicitis? The white blood count favored the former disease; the surgeons diagnosed appendicitis. The case came to operation, a very slightly inflamed appendix was



removed, the patient continued in a course of fever with rose spots, enlarged spleen and Widal reaction, lasting three weeks, and it was probably typhoid fever.

In acute intestinal obstruction in the early stages the leucocyte count is rarely increased beyond the normal limits.

In the differential diagnosis between acute intestinal obstruction and appendicitis the white count would consequently be of value, since in appendicitis we have a leucocytosis while in acute obstruction no leucocytosis usually exists.

In Case XIII, the question arose has the patient acute obstruction or appendicitis? The leucocyte count was 20,000 white cells to the c. m. m. A diagnosis of appendicitis with pus formation was consequently made. The patient came to operation and a necrotic appendix with general suppurative peritonitis was encountered. It must here be noted that some cases of general suppurative peritonitis which end fatally exhibit no leucocytosis. Cabot reports five such cases in his series.

In the diagnosis of typhoid fever in children a leucocyte count is of great value. The disease is so atypical in its onset, many of the cases are not seen until the child has been sick for five or six days, the symptoms are so notoriously uncertain that the diagnostician is often in doubt until the disease is well advanced or the post mortem reveals the true lesion. In the first week of typhoid fever the leucocyte count is normal or below normal, in the second week it is almost always below normal, as is likewise the case in the third and often the fourth weeks.

In the differential diagnosis between typhoid fever and la grippe this fact is of no value since both diseases have a similar white blood count, but in the diagnosis between typhoid fever and appendicitis, or typhoid fever and osteomyelitis, or typhoid fever and enterocolitis, and the infectious diarrhoeas or typhoid fever and pyæmia or septicæmia, this leucocyte count would be almost of diagnostic value.

If in a case of protracted fever of doubtful diagnosis in a child the writer should be asked to take his choice between making a leucocyte count and the Widal reaction, he would unhesitatingly choose the former. The Widal reaction tells me whether the case is or is not typhoid fever. If it is not typhoid fever this test leaves the clinician entirely in the dark as to what it may be. The leucocyte count does not give information which enables one to say absolutely that the case is typhoid fever, but it does help the diagnostician to say with some certainty whether the case is appendicitis or typhoid fever, whether it is pyæmia or typhoid fever, whether it is meningitis or typhoid fever, whether it is osteomyelitis or typhoid fever, whether it is infectious

diarrhoea or typhoid fever, since all these conditions usually exhibit leucocytosis while typhoid fever does not.

But I am glad to say we are not compelled to make a choice. We have both the Widal reaction and the leucocyte count as aids in the interpretation of obscure pathological conditions.

In lobar pneumonia a leucocyte count is of assistance in diagnosis. Lobar pneumonia is a disease generally characterized by a very large leucocytosis. Only the cases of the very mildest infection or some of those which terminate in death exhibit no increased white count. In children the early diagnosis of pneumonia is not always easy. In the first place the initial symptoms are many times atypical, the complaint of the child may be of pain in the abdomen rather than in the chest, there may be little or no cough and little or no expectoration. It is in these cases that a small area in the base of one lung may be entirely overlooked and the attention of the clinician directed to some other organ of the body. Under such conditions a leucocyte count is of great value, since a high leucocyte count in a child with high fever is always suggestive of pneumonia. Also in grave cases of the disease a leucocyte count gives some indication as to the outcome. Grave pneumonias without leucocytosis almost invariably die.

Tuberculosis in most of its forms is unattended with an increased leucocyte count. Pulmonary tuberculosis is an exception to this rule and usually exhibits a leucocytosis except in its initial stages, probably because there is already a mixed infection when the case comes under the care of the clinician. As a means of differentiating between tubercular and septic peritonitis the white count is of value as also between tubercular and septic meningitis. There are however some observers who dispute the latter statement.

In meningitis other than the tubercular form a leucocytosis usually exists. In Cabot's series of cases two were in children and both gave a leucocyte count of over 14,000 corpuscles to the c. m. m. In the differential diagnosis between meningitis and typhoid fever with meningeal symptoms, the white count is of great value.

In osteomyelitis in children a leucocytosis usually exists. The writer has notes of a case in a girl of five years where for some days doubt existed as to whether the case was osteomyelitis or typhoid fever. A white blood count would have removed the doubt and guided the diagnostician to a right conclusion.

Of the acute exanthemata measles has no leucocytosis while scarlet fever exhibits a count of from 17-30,000 white cells to the c. m. m. Of the other diseases met with in children, diphtheria, tonsillitis and acute articular rheumatism

cause an increase in the number of leucocytes in the blood, while la grippe presents a normal or diminished leucocyte count.

Of course it must be borne in mind that this procedure as an aid in the diagnosis of diseases of children is only in its infancy. The statistics are meagre, the series of cases examined are not as large as they ought to be. Many of the statements here made may be subjected to change before the whole truth is known. Yet enough has been done by competent observers to at least warrant the conclusions which have been stated.

Having these facts in mind your attention is called to the list of cases about to be reported, but before so doing just a word as to technique. The red blood mixer of a Thoma Zeiss hæmocytometer and a bottle of one-third per cent. glacial acetic acid solution in water are constantly carried in the medical hand satchel. When a patient is seen in whom a count is desired to be made the lobe of the ear is punctured, the mixer is filled with the proper amount of blood and acetic acid solution, the whole shaken up and the apparatus taken to the office. At the office with the aid of the proper slide and the microscope the count is made.

This method does away with the necessity of carrying a microscope to the place where the patient lives, and is accurate, provided the mixer is well shaken previous to making the count. The writer has found no loss of cells as a result of one or two hours' delay before making the count and he believes that no error arises even though the estimation be not made at once.

Case I. Clarence B. Boy, ten years. Had measles one week ago. After the rash disappeared the child maintained a temperature which could not be accounted for. No lung, heart or kidney involvements. One day later the boy complained of pain in the left ear. White count 25,000 leucocytes to the c. m. m. Diagnosis with the aid of blood count, otitis media, with pus formation. Later pus discharged from ear.

Case II. Miss F. Seen with Dr. Hunter. Fifteen years. History of five days pain in the right lower abdomen, with vomiting, constipation and fever (103°). Physical examination: Abdomen distended. Tenderness and marked resistance in the right lower abdomen. Clinical diagnosis: Appendicitis with forming abscess or necrosis. White blood count, 3,300 leucocytes to the c. m. m. Diagnosis with the aid of the white count: A non-suppurative lesion in the abdomen, probably typhoid fever. Surgeon operates; no pus; a normal or slightly inflamed appendix, which was removed. Patient continued in a course of fever, which lasted three weeks and was characterized by rose spots, enlarged spleen and Widal reaction. While there

is a possibility that this patient was suffering from a mild catarrhal appendicitis coupled with typhoid fever, the probability is that the disease was from the outset a case of typhoid fever stimulating appendicitis.

Case III. Boy. R—. Sixteen years of age. History of abdominal pain and fever lasting over some weeks. Physical examination. A large fluctuating tumor in right abdomen. Clinical diagnosis: Appendicitis with abscess. White blood count, 16,000 leucocytes to the c. m. m. Diagnosis with the aid of the white count confirms the clinical diagnosis. Surgeon operates. A large amount of pus evacuated. Necrotic appendix.

Case IV. Lon B—. Boy. Twelve years. Seized with intense pain in the right lower abdomen, accompanied with vomiting, constipation and fever (103°). Physical examination: Marked tenderness over McBurney's point. Urine normal. Clinical diagnosis: Appendicitis. White blood count, 7,000 corpuscles to the c. m. m. Diagnosis with the aid of the white count, catarrhal appendicitis; no pus. Case not operated upon. Recovery in four days.

Case V. Boy. C—. Eleven years. Seized with persistent pain in the lower abdomen, constipation, vomiting, tympanites and some fever (99.6°). Urine normal. Physical examination: Tenderness over the lower abdomen; most marked on the left side. No palpable tumor. Clinical diagnosis: Appendicitis, typhoid fever or ? White blood count, 19,000 leucocytes to the c. m. m. Diagnosis with the aid of the white count excludes typhoid fever and points to a suppurative lesion in the abdomen. Operation advised. Parents refuse. Next day white count, 22,000; no change in symptoms. Next day white count, 14,000. Boy better. Inflammation receding. Will not operate. Patient recovered. In this case the leucocyte count gave a means of following the course of the inflammation which could not have been secured by a study of the clinical symptoms.

Case VI. Oswald B. Boy. Sixteen years. Complains of headache, fever (102°) and diarrhoea lasting over three days. Physical examination: Tympanites over abdomen. No spots or enlarged spleen. Diagnosis: Typhoid fever or infectious diarrhoea. White blood count, 7,600 leucocytes to the c. m. m. Since infectious diarrhoea is usually accompanied by leucocytosis, the white count points toward typhoid fever. Two days later, white count, 6,300 leucocytes to the c. m. m. The case finally developed rose spots, enlarged spleen, gave the Widal reaction and ran a typical typhoid fever course.

Case VII. John N. Six years. Been sick six days. Fever, loss of appetite, cough and

constipation. No nose bleed. Lungs, heart, abdomen and kidneys normal. Diagnosis (?). White blood count, 3,300 leucocytes to the c. m. m. Diagnosis with the aid of the white count, probably typhoid fever. The case later developed rose spots, a palpable spleen, gave a Widal reaction and the fever ran a typical typhoid course.

Case VIII. Child, Van D.—. Four years. Seen in consultation. Child has been sick four days. Fever ( $102.5^{\circ}$ ), coated tongue, extreme restlessness, some cough and pronounced tympanites. Physical examination: Heart, abdomen and kidneys normal. Crepitant râles and tubular breathing over the right lung posteriorly. Clinical diagnosis: Lobar pneumonia. White blood count, 30,000 leucocytes to the c. m. m. Diagnosis with the aid of white count confirms the clinical diagnosis. The case developed a frank lobar pneumonia, and recovered by crisis.

Case IX. Child, Kr.—. Age two years. History of fever, loss of appetite, coated tongue and constipation, lasting one week. Has been about the house but seemed sick. Attack began after drinking wine at Christmas time. Physical examination: No rose spots, spleen not palpable, temperature,  $101^{\circ}$ , heart, lungs and kidneys normal, abdomen somewhat distended. Clinical diagnosis: Typhoid fever or (?). White blood count, 6,000 leucocytes to the c. m. m. Diagnosis with the aid of the white count: Typhoid fever. The case continued in an irregular course of fever, gave the Widal reaction and was undoubtedly typhoid fever.

In these atypical cases of typhoid fever where the symptoms are not characteristic, the white blood count as well as the Widal reaction assists in making the diagnosis.

Case X. Child, Kr.—. Five years. Same family as above case. History of beginning of attack, same as previous child. Diagnosis: Typhoid fever or (?). White blood count, 5,000 leucocytes to the c. m. m. Diagnosis with the aid of the white count, typhoid fever. This case later developed a typical typhoid fever, with Widal reaction.

Case XI. John A.—. Boy, seven years. Complained of pain in stomach, with loss of appetite, vomiting, diarrhoea and cough. Physical examination: Temperature  $105^{\circ}$ , lungs, heart and abdomen negative, albumen in urine, no casts. Diagnosis (?).

White blood count, 23,000 leucocytes to the c. m. m. White count excludes typhoid fever and la grippe and points to some disease with a marked leucocytosis, possibly pneumonia. Next day, condition same, but on careful examination an area the size of an orange was found in the

base of the right lung posteriorly, which was dull on percussion and exhibited tubular breathing. Diagnosis: Lobar pneumonia. One day later the whole lower lobe of right lung was completely involved. In this case the white blood count gave a clue as to where the infection might be located, and thus assisted the clinician in making an early diagnosis.

Case XII. Gladys B. Girl, six years. Five days ago caught cold. Later complained of headache, nose bleed, constipation, fever and great prostration. Temperature,  $104^{\circ}$ . Pulse, 120. Physical examination negative. Diagnosis: Typhoid fever, la grippe or (?). White blood count, 7,000 leucocytes to the c. m. m. As both la grippe and typhoid fever have a normal or diminished white count this procedure will not assist in differentiating between the two conditions. The case continued with fever for four days and recovered. No Widal reaction. Diagnosis, la grippe.

Case XIII. Mr. R. Young man. Seen with Dr. Hunter. Seized with pain in the abdomen while doing gymnastic exercises. Persistent vomiting, marked tympanites, obstipation and mild fever. Clinical diagnosis: Intestinal obstruction or appendicitis. White blood count, 20,000 leucocytes to the c. m. m. Diagnosis with the aid of white count: Appendicitis with pus in the abdomen. Operation: Gangrenous ap-

Case XIV. Willie P. Boy, eight years. History of persistent cough, with loss of appetite, fever and at one time expectoration of blood. Physical examination: Temperature,  $101^{\circ}$ . Pulse, 90. Dullness in the base of right lung posteriorly, tubular breathing in same area, all other findings negative. Clinical diagnosis: Lobar pneumonia or acute pulmonary tuberculosis. White blood count, 27,000 leucocytes to the c. m. m. Diagnosis with the aid of white count: Lobar pneumonia. Later lung clears. No bacilli in sputum. Boy recovers.

Case XV. Willie W. Boy, twelve years. Well till three weeks ago, when he fell on a stone sidewalk, striking his head. Came home in a dazed condition. Complained of headache more or less ever since. When seen boy is dull and drowsy, has vomited once or twice; temperature,  $104^{\circ}$ ; pulse, 106, full and bounding; no diarrhoea; no nose bleed; sleeps poorly and talks in his sleep. Lungs, heart, abdomen and kidneys normal. Diagnosis: (?), meningitis, typhoid fever or ? White blood count, 8,000 white cells to the c. m. m. Diagnosis with the aid of white cells excludes meningitis and points toward typhoid fever, or some other disease without leucocytosis. Boy later developed typical typhoid fever with rose spots, tympanites, diarrhoea and Widal reaction.

## THE DIFFERENTIAL DIAGNOSIS OF LEUKÆMIA, PSEUDO-LEUKÆMIA AND "AGUE CAKE."\*

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Gentlemen—I have the privilege of presenting to you this morning three patients, who are suffering from very interesting maladies, all comparatively rare, yet diseases you should not fail to recognize.

The first is a patient who is under the treatment of my colleague, Dr. Schoch, to whom I was called in consultation about a week ago to verify the doctor's diagnosis and make an examination of the blood. The doctor very kindly gave his consent to have this patient shown to our Society, for which fraternal feeling I wish to express my gratitude.

The patient is a woman, forty-five years of age, was born in Bohemia, and emigrated to this country twelve years ago. She has always lived on a farm, and was a hard-working woman until a year and a half ago. The family history is as follows: Her father died of acute tuberculosis, at the age of 52 years, and her mother died from some acute lung trouble at the age of 64, having been sick only three days. She had two brothers, but both died in infancy. Venereal history is denied. At the age of 15 years she began to menstruate and was married at 20. The child bearing period was eventful, as she was pregnant 14 times, but has only five children living. Twins were born twice, but only one of them is alive.

The fruit of the first pregnancy was stillborn; with the second confinement she had twins, but both died from convulsions in the second week.

The third pregnancy terminated prematurely by three weeks, and the babe lived only three weeks. With the fourth, the first healthy boy was born.

With the fifth, a healthy girl was born.

The sixth was a breech presentation and the babe asphyxiated during the delivery.

The seventh lived.

With the eighth confinement she had twins. The boy lived, but the girl died of convulsions when sixteen weeks old.

The ninth child died when eight months old, from summer diarrhœa.

The tenth lives, and is healthy.

The eleventh lived one year, and died from scarlet fever.

The twelfth died from convulsions when one year and nine months old.

The thirteenth lived one year, and died from teething and convulsions.

The fourteenth pregnancy terminated prematurely by two months, and occurred two and a half years ago.

There is no history of puerperal fever throughout the child bearing period, nor of any infectious diseases. She states that eight years ago she was very weak for several months after one of the confinements. With the exception of headaches and eructations from the stomach she had always been well and plump. Menstruation had been normal after the last pregnancy for one year; then the same became profuse and would last from seven to nine days. Since last March it has changed so that she would come around every three or five weeks, alternating. It changed in character by having become thin and sanious, and would last only from two to four days.

Last winter she was troubled with bronchitis and had a sensation as if there were a lump in her throat. When summer came these symptoms disappeared.

Her present illness can be dated back to one year ago last July. Then she noticed a small, hard nodule under the skin, about one inch to the inner side of the left nipple. In the course of a few months a few more nodules appeared on the same breast, spreading in the direction of the axilla—and now a number of these nodules are encroaching upon the nipple and seem to retract it the same as in cancerous disease. They are not painful on pressure, but she would occasionally have darting pains through the breast, and extending into the axilla. Otherwise she was quite well until last March, when more serious symptoms presented themselves. She began to complain of general weakness, and pain in the sternum, which, as she says, extended through to the back. Soon after she also complained of pain and heavy feeling in the left side and some in the right side. The abdomen gradually became prominent and the lower limbs became œdematous. The latter symptom subsided for some time after proper medication, but the abdomen continued to grow more prominent, particularly upon the left side. During the fall months she had more or less temperature, ranging between 100 degrees and 102 degrees Fahrenheit, and night sweats until two weeks ago.

The status præsens shows that she is visibly anæmic, yet she is not cachectic in appearance. The tongue is coated with a little whitish fur and much paler than it would be if she were in good health. The mucous membrane of the mouth is also very pale. The sight and hearing are not affected. The pulse has about 110 beats and the temperature 99.6 degrees Fahrenheit. The respiration is labored from the pressure below the diaphragm. An examination of the heart

\*Read before the Minnesota Valley Medical Association, December, 6, 1898.

shows it to be displaced a little upwards, but no murmurs are present. No râles are heard in the lungs, but the breathing is somewhat harsh from bronchial respiration. There is no tenderness on pressure in the bones except over the sternum, but she complains of pains in the right femur and humerus, and the frontal bones. There are no enlarged lymphatic glands present except the small nodules in the left breast and axilla, and some very small, hard lymphatics in both groins.

A vaginal examination shows a retroverted, hypertrophied uterus, not very movable. Upon further inspection we notice that the left side of the abdomen is much more distended than the right, and that the abdominal veins are prominent from venous engorgement. Upon palpation we find that the abdomen is quite tense and slightly tender on pressure, though when undisturbed the patient suffers no pain. We find the liver dullness extending about two inches below the costal arch. On the left side we can readily outline an even mass, not very hard, extending nearly to the middle line, and from the costal arch down into the iliac region. The tumor moves slightly up and down with respiration; there are apparently no adhesions, as the abdominal muscles seem to move freely over it. Over this mass is dullness, extending posteriorly to the inferior angle of the scapula, but there is no fluctuation. In the sitting posture there is flatness on percussion over the entire lower portion of the abdomen, showing the presence of ascitic fluid. The lower limbs are slightly œdematous. The urine is very acid in reaction and is heavily loaded with urates. Sp. gr. 1022. No albumen or other morphological elements.

So much for the present status. The question now arises, what may this tumor be, and what condition has produced it? An enlargement in the left hypochondrium can be recognized with but little difficulty, and in order to differentiate the nature of this enlargement, we must arrive at a conclusion by the process of exclusion.

A tumor occupying and overstepping the normal splenic boundaries will probably be of splenic origin. Occasionally enlargement may be simulated by a spleen of normal size displaced downward by intrathoracic growths or effusions. Rarely, the tumor may be due to cancer of the stomach; the concomitant symptoms sufficing to distinguish cancer of the cardiac end. Percussion will reveal the presence of subjacent gases, and palpation will detect the greater hardness of the gastric tumor.

Enlargement of the left kidney may be due to cancer, abscess, hydronephrosis and other causes, and may simulate splenic hypertrophy. The renal tumor may be traced farther backward, and would be irregular instead of present-

ing the characteristic outline of the spleen with the notch. It would grow from the lumbar region rather than from the left hypochondrium and the tumor would be stationary, instead of moving up and down during respiration. The urine contains no blood or cancer cells, which would be present if the patient were suffering from cancer of the kidney. The clinical history and symptoms will here again prevent error.

Enlargement of the left lobe of the liver may be traced toward the right side of the body, becoming more noticeable as the spleen is receded from.

An omental tumor is usually separated from the splenic region by an area of resonance.

Fæcal accumulation in the colon may closely resemble a splenic tumor, as it does other abdominal enlargements. The doughy consistency of an enlarged spleen may be like that of a fæcal mass, but one may often permanently alter the shape of the latter by the pressure of the finger, and in any case doubt may be dispelled by the use of purgatives.

We can differentiate this from tumors of the uterus and appendages in that the growth started in the neighborhood of the spleen and extended down, while ovarian and uterine growths start from the pelvic region, and that the vaginal examination is positive, while you remember in this patient it was negative.

In pregnancy the tumor would be uniform and have a well defined outline, there would be well marked mammary signs, and by this time she would have felt quickening and the fœtal heart could probably be heard.

On the other hand, recognition of splenic tumors may be prevented by gaseous distension of the stomach and bowels, by abdominal dropsy, diffuse or encysted, by fæcal distension of the colon, and may, indeed, be impossible until these conditions have been remedied.

So far we have enumerated all enlargements which may possibly occur in this region. After excluding all these there is left the spleen to deal with.

When the patient is in the recumbent position the ascitic fluid gravitates downward, and the anterior border of the tumor and the notch can be definitely outlined; the even mass extending from the left hypochondrium into the left iliac region is an enormously enlarged spleen.

We have now answered the first part of the previously asked question, "what may this tumor be?" and we must now look for an answer to the second part of the question, "what condition has produced this enlargement?" And, again, we must arrive at a conclusion by the process of exclusion. Leucocytosis, tumors of the spleen such as cancer, echinococcus, amyloid degeneration, syphilis, tuberculosis, leukæmia, pseudo-leukæmia, splenitis and abscess, typhoid fever,

chronic malaria, or some other infectious diseases will cause such an enlargement.

Aortic insufficiency sometimes produces a pulsating splenic tumor, but this condition must of course be eliminated in this case.

The spleen may be enlarged from venous engorgement, but that is an insignificant factor here also. In such cases the diagnosis will rather depend upon concomitant symptoms than upon the physical characters of the enlarged organs.

Of the splenic tumors I mentioned cancer, but there is no personal or family history of this disease. The spleen is not nodular or painful; she is not cachectic, but anæmic, nor has she rapidly emaciated.

Echinococcus of the spleen presents no characteristic symptoms. When the tumor is small and escapes observation, or when the fluid nature of its contents can not be recognized, its existence can not be determined. In larger tumors the hydatid thrill will, when present, assist the observer, and the presence of fluctuation will of course serve to exclude all solid enlargements of the spleen from consideration. Abscess will differ in its shorter course, its rapid increase in size, and its inflammatory symptoms, the general condition contrasting with the excellent condition of health usually observed in simple hydatid tumor. Certainty can only be attained through an exploratory puncture and examination of the contents. Enlargement from lardaceous degeneration following prolonged suppuration, especially of bone, the suppurative processes of phthisis pulmonalis and of scrofulosis, syphilis and chronic malaria poisoning we must exclude, as there is no history of any of these diseases ever having been present; and, as this enlargement is much greater than any infectious disease is apt to produce, nothing is left but leucocytosis, leukæmia, or pseudo-leukæmia.

In leukæmia we have more marked enlargement of the spleen and less of the lymphatics, sometimes almost none, and there is a preponderance of the white blood corpuscles, while in Hodgkin's disease there is anæmia, that is a diminution of the number of red blood corpuscles, and no increase in the leucocytes, and early enlargement of the lymphatic glands in the neck, axilla or groin.

In leucocytosis from the infectious diseases and various cachexias we have an increased number of colorless corpuscles, but usually there is not so much of an increase in these elements as in leukæmia, yet there may be as great an increase in the former as in the latter. In leucocytosis the increased number of white corpuscles is transitory, and the result often of inflammatory conditions. Here we have a patient who gives no history of inflammatory disease, which would tend to exclude leucocytosis and favor

leukæmia. Yet we can still better confirm our suspicion by staining the blood specimens and carefully examining the variety of blood corpuscles.

In leukæmia we have an increase in a different kind of white blood corpuscles which has been called a myelocyte, and is supposed to have its genesis in the bone marrow. It is larger than any corpuscle found in leucocytosis, stains with a neutral dye, and is therefore a neutrophile of the mononuclear variety, and is regarded as a pathological white blood corpuscle.

These myelocytes are always present in leukæmia in varying proportions, and the increase in the white blood corpuscles is mainly due to the presence of this so-called pathological blood corpuscle, while in leucocytosis the polynuclear neutrophiles are increased in amount.

The eosinophiles are also increased in leukæmia. These are one of the five normal white blood corpuscles, also supposed to originate in the bone marrow, and are present in very small numbers in normal blood. In myelogenic and splenic leukæmia the eosinophiles are markedly increased, and here is where the diagnostic value of the same comes in. The examination of the blood of this patient reveals the presence of a large number of eosinophiles, and this enables us to make a positive diagnosis of spleno-myelogenic leukæmia. Were this a case of genuine lymphatic leukæmia, we would have enlarged lymphatic glands, while the myelocytes would be absent. We have here no enlarged glands, only the small "lymphadenie cutanee" of the breast and small hardened lymphatics in both groins, which shows that the lymphatic element apparently plays a small rôle in connection with it. It is very rare, indeed, to meet a case of unmixed lymphatic, splenic, or myelogenic leukæmia, and when it does occur any one variety usually partakes of the elements of the other.

The lymphatic element is not very prominent here, but we do have the tenderness over the sternum upon pressure or percussion, and pain in some of the long bones; which shows an involvement of the bones or the bone marrow.

This completes the full picture of our case: a disease coming on insidiously, great anæmia with all the accompanying symptoms, great weakness, a painless and uniform enlargement of the spleen, enlargement of the liver with ascites, tenderness over the sternum, and an increased number of eosinophiles in the blood. Other accompaniments of this disease, such as hemorrhages, vomiting, retinal changes, etc., she has fortunately not suffered from.

I have briefly mentioned the various forms of leukæmia and that one variety may shade into the other. For the sake of differential diagnosis I will repeat once more that three varieties are recognized: First, lieno- or spleno-leukæ-

nia, where we have an enormously enlarged spleen, and the blood containing large mononuclear and eosinophile leucocytes. This form is often combined with the myelogenic variety. Second, myelogenic leukæmia, which is supposed to have its origin in the diseased marrow of the bones, the blood containing a large number of eosinophile and mononuclear leucocytes, and nucleated red blood corpuscles. Third, lymphatic leukæmia, which is accompanied by a swelling of the lymphatic glands and hyperplasia of lymphatic tissues, and closely resembles the malignant lymphoma or Hodgkin's disease. The blood shows an increase of the small lymphocytes.

In pseudo-leukæmia, i. e., Hodgkin's disease, or malignant lymphoma, we have a reduction of the number of red blood corpuscles and hæmoglobin, and no increase in the leucocytes. The lymph glands become markedly enlarged, and the spleen may or may not be in a lesser degree. With this introduction to pseudo-leukæmia we will take up the next case.

The patient, Mr. H. S., aged 60 years, has a good personal and family history, and has been a hard working farmer until a few years ago. There is no history of syphilitic, tubercular or other constitutional disease. He always enjoyed good health until one year ago, when he observed a small swelling on the right side of the neck, behind the sterno-cleido-mastoid muscle; in fact, his attention was first called to it by his wife. The enlargement was not painful and did not annoy him in any way. Last spring he noticed some small nodules in the right and left groin, and after some months he noticed that there were some more swellings forming on the other side of the neck, and under the jaw. He came to my office the first week in August to consult me in regard to the large swelling on the neck, and also about an itching which he had on his body. He complained of no other symptoms but general weakness. He always had a good appetite, and his bowels were in order.

Status præsens: On examination we find that the man is fairly well nourished, only a slight pallor in the face. His respiration is slightly increased. Pulse, 80. Temperature, 99.5°. Nothing abnormal is to be observed in the heart's action. The expansion of the chest is reduced to an inch and a half. The glands on both sides of the neck are very much enlarged, varying in size from a walnut to a hen's egg; the submaxillary set and those of the anterior and posterior triangles are involved, extending down and behind each clavicle. They are freely movable, and are not adherent to the skin or to each other. They vary in consistency, some being softer and others harder, but no fluctuation is found in any of them. In looking into his throat you can observe that the pharynx is being compressed

on the right side by an involvement of the tonsil, and one of these tumors growing inward, which interferes with his swallowing and speaking. You next discover a bunch of these enlarged lymphatics in each axilla, but which do not yet interfere with the motion of the arms or cause pressure on the brachial and axillary veins. One tumor of the size of a walnut is located in the inner side of the right arm above the elbow. Next you will find some small nodules in both inguinal regions, and large bunches in Scarpa's triangle on each side. Here they vary in size from a hazel nut to a pigeon's egg.

A definite enlargement of the spleen and liver can not be discovered, and the abdomen is not more prominent than when he is in good health. At present we have no visible evidence that the deeper groups of lymphatics are involved. An examination of the blood shows no increase in the leucocytes, but a decrease in the number of the red blood corpuscles. The same were counted with Daland's hæmatocrit and about 2,400,000 were found in one cubic millimeter, or a reduction of more than one-half.

With this clinical picture and history before us we have no hesitancy in pronouncing this to be a case of pseudo-leukæmia or Hodgkin's disease. The two principal diseases with which this may be confounded are lymphatic leukæmia and tubercular adenitis. In Hodgkin's disease the glandular enlargement is usually greater than in lymphatic leukæmia and altogether a more prominent feature, and the spleen is not so often increased in size. The diagnosis rests principally upon the examination of the blood. The number of the red blood corpuscles is reduced and also the amount of hæmoglobin. The leucocytes are not increased, or at least not until the close of the disease. The two diseases are so much alike that for a long time they were confounded, and hence came the name of pseudo-leukæmia for Hodgkin's disease.

Of the chronic forms of adenitis which are liable to be mistaken for lymphadenoma, the tubercular is the most common; but they are easily distinguished from the latter as they are accompanied with pain and tenderness, and a tendency to caseation and suppuration. Furthermore, there are generally other symptoms present which would point to tuberculosis. If there were tubercular glands in our patient, many of them would now be broken down and suppurating. The enlargement in tubercular disease is rapid at first, and may last for years in a group without extending; the bunches are often, even when small, welded together, most important of all, they tend to suppurate, a feature scarcely ever seen in true lymphadenoma. Size is not a safe criterion. A single large bunch in the neck, particularly if submaxillary, lasting over a year or year and a half without involvement of the

glands on the same or the opposite side, or in the axilla, is almost certainly not malignant lymphoma. On the other hand, a group of slowly enlarging glands in the anterior or posterior cervical triangles, with gradual affection of those in either or both axillæ, or the groins, particularly if the patient is growing anæmic and weak, would render the suspicion of Hodgkin's disease strongly probable.

We might have lymphatic enlargements as a result of carcinoma or sarcoma, but they would be confined to the one group of lymphatics that would be affected from the malignant growths.

So far we have pointed out the main features in the differential diagnosis of the three varieties of leukæmia and pseudo-leukæmia, and we now come to another disease, which was mentioned when we recapitulated the various causes of splenic enlargements. It is the enlarged spleen from malarial infection, or the so-called "ague cake," and is very easily mistaken for spleno-leukæmia or spleno-lymphatic leukæmia.

The third patient, whom I show you today is a good illustration. I saw her but once, three weeks ago, and as splenic hypertrophies are rarities in this section of the country, I obtained her consent to be shown to this Society. She gives the following history: Age 24 years. Is married, and has three children, the oldest being five years, the second, three years, and the youngest, one year old. She always enjoyed good health until last May, when her family removed to Arkansas. They were all taken sick with malarial fever, and had to return to this state: this was in the middle of last October. She complains of many symptoms, which are concomitant with this disease. The menses have not yet appeared since the last confinement, although the babe was fed artificially since it was born. The diagnosis in this case is very simple. The history of malarial fever, followed by cachexia, clears the diagnosis at once. I did not have the time to make a count of the red blood corpuscles, or to determine the character of the leucocytes. It will suffice to say that in malarial cachexia there is a decrease in the amount of hæmoglobin, and in the number of the red blood corpuscles, and a limited increase, or decrease even, in the number of leucocytes of the polymuclear variety, whereas in leukæmia we have the large mononuclear and eosinophile leucocytes.

The ague cake of chronic malarial poisoning is usually accompanied by a degree of cachexia, as is shown in the earthy pallor of the complexion. This is often sufficient to enable one to discriminate between several forms of enlargement of the spleen, for it differs from the intense pallor of leukæmia by its sallow hue, and is not at all like the hue of the complexion in amyloid disease.

The cancerous cachexia, it is true, may closely resemble it, but here the history and symptoms assist in avoiding mistakes.

It is the object of this paper to treat only of the differential diagnosis of leukæmia, pseudo-leukæmia, and ague cake, and I was fortunate enough to be able to present a case of each of these diseases to this Society. They are all very rare in this section of the country, and it may take some time before we meet with any of these cases again. Nothing has been said of the causation of the first two diseases, and it would make this paper too lengthy to take up that subject together with the morbid anatomy and treatment.

Many remedies have been tried in leukæmia and pseudo-leukæmia, but all have failed. The prognosis of these sister diseases is extremely unfavorable, and, although the progress of the same has been arrested in some instances and even reported cured, the doubt remains whether they were true examples of these diseases. When once established, the exitus lethalis is the only termination to be expected.

#### INJURIES OF PARTURITION CAUSED BY THE OBSTETRIC FORCEPS.\*

BY HERBERT DAVIS, M. D.,

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In groping for a subject of interest to present to this honorable society, the paper of Prof. W. Japp Sinclair read at the last British Medical Association occurred to me, to the contents of which I took some objections. His stand was briefly, that the obstetric forceps, although an instrument of great benefit at times, was used so often unnecessarily that it caused more injuries in parturition than existed previous to its invention, and that the rapid growth of gynæcology was due to the injuries caused by the forceps. Is this true? Would it have been better if this instrument, which Boudelocque said, "was the most serviceable ever invented," had never existed, or were only used by those especially endowed, as it was in the days of Chamberlin?

Obstetrics as practised today is largely surgical. The men who are engaged in it are mostly general practitioners, and as a rule fully qualified both mentally and morally to cope with it. They too often have had to learn the use of forceps after leaving their alma mater, and possibly may have caused, while doing so, some of those injuries which Sinclair decries, but this proves nothing, unless it is that the study of obstetrics in our medical colleges is relegated to the back-

\*Read before the Minnesota Academy of Medicine, December 7, 1898.



ground, whereas it ought to be on an equal plane with surgery and gynecology. Most of our text-books in gynecology mention instrumental labor as one of the causes of lacerations of the cervix and perineum, placing it usually in the first or second category of causes; to this I take exceptions. Precipitate labor is a far more common cause, in my experience, than forceps; also labor occurring with a preëxisting disease of the cervix.

Emmet frankly acknowledges that he expected to find more lacerations amongst the poor than among the better class who were able to procure their choice of medical attendants, but it is not so.

The poor are oftener delivered with forceps (I am inclined to believe too often to save time to the busy practitioner), and yet no more injuries were observed in them than in their more favored sisters. This same authority mentions also that women in the country, presumably without medical attendance, were subject to an equal distribution of injuries, also that 30 per cent. occurred from tedious labors; this is surprising when one considers that such an accident could hardly happen only after the os was fully dilated, and would then be caused by pressure and sloughing. This seems to prove quite conclusively, coming as it does from such an illustrious authority, that as far as injuries to the cervix are concerned instrumental labor should be placed near the last of the list of causes.

Of injuries produced by the forceps to the vagina and perineum I do not possess any statistics, but that they are usually so produced I do not believe; that they may be I do not deny, but I think that this instrument handled with ordinary skill assisted by anæsthesia has saved more perineæ than it has torn, of course always remembering that "it is not the instrument that operates, but the hand that directs it."

No rule can be laid down when to resort to forceps. In the second stage of labor, some authorities say do not delay longer than three, four or six hours, but each case is a law unto itself. Men do not differ much about things that they can reason upon from well known undisputed facts, but they do when a thing is but dimly revealed, when it is guessed at, not reasoned, and always in argument when the premises are the result of individual observation and judgment, and they will differ about operative midwifery, because one case cannot be compared to another and depends upon individual judgment for even a proximate understanding of its peculiarities.

It is a notorious fact that statistics only tell part of the truth, that one cannot draw conclusions from an item, but they have to be considered collectively. Take for instance Dr. Sinclair's reference to Collins, who used the forceps once in 617 deliveries, but he does not men-

tion that Collins had one craniotomy in 141; compare this with Siebold, who used the forceps once in seven times, and had one craniotomy in 2,093 cases, or with Osiander, who during thirty years in the Göttingen Lying-in Asylum, used the forceps in every two and five-tenths cases, yet he only used the perforator once in his life. These may be the extremes, but yet they represent the full value of statistics. Sinclair also refers, with gloomy forebodings, to the practice of some Manchester physicians, who informed him that they used the forceps in twenty-five and thirty per cent. of their cases, and one who seriously told him that his figure was seventy-five per cent., and yet he does not say what percentage of these women were injured. In my own practice and that of my colleagues, instrumental delivery varies from fifteen to twenty-five per cent., and I think I may say without egotism that the percentage of injuries is very small; only one case of laceration of the vagina has come under my notice in five years, and that was in an impacted occipito-posterior presentation, in which nature was allowed to take its course until the parts were œdematous and finally the folly of waiting was apparent even to the attendant, and forceps were used, but this accident could hardly be charged to the instrument. A complete rupture of the perineum is rarely seen, and the minor tears occurring either in precipitate labors or instrumental ones are usually successfully repaired before the physician leaves the house, so the injury does not cause permanent distress.

It is a recognized fact that the forceps ought not to be used, unless in exceptional cases until the os is fully dilated, but Dr. Murray calls attention to one valuable truth, i. e. a spasmodic condition of the os which, if an examination is made in the interval between pains is found to be fully dilated, but as soon as contraction begins the calibre becomes much reduced; now if the forceps are applied and traction made during a pain, laceration will probably take place, so that traction should occur in the interval.

In occipito-posterior positions after weary waiting for the os to dilate, and it is found that the head has not engaged it is better to turn, for if the attempt is made to drag the fœtus out extensive damage is done to both mother and child.

Another trite remark occurred in the discussion of said paper, and that was to always apply the forceps to the biparietal diameter; this is an utter impossibility, and one who has tried delivery at the brim will agree that it is so. With the head in the transverse position, and with a slightly flattened pelvis, the forceps will be applied to the occipito-frontal or occipito-parietal regions in spite of faithful attempts to place them biparietally.

There are common faults of technique, the principal one of which is the use of archaic forceps. A light, strong instrument with a proper curve should be used, preferably an axis traction. Another fault lies in the character of the traction; it should be at first gentle and steady, and gradually increase, not jerky, and with an interval of rest simulating the natural contractions.

Sinclair conveys the idea that previous to the more extensive introduction of the forceps laceration of the cervix and perineum did not occur, but it evidently did, for the restoration of these bodies, made possible by the skill of Emmet, kept gynæcologists employed for years, as did the successful closure of vesico-vaginal fistula with silver wire by Sims, which relieved countless suffering women of that disgusting affliction caused by letting "nature take its course."

Students leave college with some well grounded medical truths and others they look upon with distrust. First impressions are said to be lasting, and those impressions that we receive from our colleges, our preceptors and our text-books are liable to be permanent. Among these distrusts is that "glittering chunk of obstetrical wisdom," "meddlesome midwifery is bad." What is meant by meddlesome midwifery? If it is the application of forceps in the first stage before the os is fully dilated, or with a face, brow or occipito-posterior presentation before the head has engaged, or if in the second stage before reasonable time has elapsed and the pleasure of the accoucheur is only studied, then we are all agreed. But if it means the skillful application of the forceps or other surgical measures to relieve suffering and preserve life, any one ought to accept it as an obsolete term. The forceps are essentially a child-saving instrument. The larger number of still-born children under the old "let nature take its course" system was startling as compared to the comparatively small number now. When we take into consideration the mobility of the foetal skull, how adaptable it is, one can understand how very, very few permanent foetal injuries occur. Meigs says: "I think it almost out of the bounds to injure a foetus with them provided they are properly adjusted and used with common discretion." This can readily be understood when it is realized that by pressure over both parietals the anterior posterior diameter is lengthened from one-third to one-half an inch.

Infantile palsies occur no more often with forceps deliveries than without them, except cutaneous paralysis caused by pressure which usually subsides, but those severe palsies caused by lesions of the brain substance or hemorrhage are as often seen after unaided as instrumental labor; fortunately they rarely occur.

The aim of this paper is not the demonstration of any new facts, but a plea for the more general and intelligent use of the obstetric forceps. More and better facilities should be given to students to further their studies in this department. The personal conducting of an accouchement should be given him under a competent instructor. In no other branch is the mannikin considered a fit subject for instruction. It is so simple for the lecturer or author to speak of "judicious manipulation" in the application of forceps, which is truly explicit. They do not tell him to swear neither do they tell him not to, so if he has any anathemas to use let him direct them toward his venerated authorities, not toward the simple blades.

To sum up with, the forceps as an instrument for the relief of humanity has no peer; having by their use better control over the forcible expulsion of the child from the vagina fewer tears of the perineum are produced; more lacerations of the cervix and vagina occur from tedious labors than by delivering with forceps, if they are applied within a reasonable time; an increasing use of them tends to lessen infant mortality, and increase preservation of the mother's health; it is not just to compare the resourceful men of the present day with those of the seventeenth century as an illustration of how "knowledge comes, but wisdom tarries." Nor is it true, in my opinion, that the general practitioners and the obstetricians are the "feeders" of the gynæcologists, and such teaching is pernicious.

#### REMOVAL OF THE WHOLE TRANSVERSE COLON AND PARTIAL RESECTION OF THE PANCREAS AND GREATER CURVATURE OF STOMACH FOR CARCINOMA, WITH LATERAL SUTURE OF BOTH MESENTERIC VEINS.\*

By A. SCHWYZER, M. D.,

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The case, which seems to be the only one reported of entire removal of the transverse colon and also unique for its lesion and suture of the mesenteric veins, was as follows:

A carcinoma involving the whole transverse colon and including the gastro-colic ligament as well as reaching to the base of the meso-colon was removed. In dividing the base of the meso-colon the inferior mesenteric vein was laterally opened to the left of the duodeno-jejunal fossa and sewed up laterally. The superior mesenteric vein was also laterally opened to the extent of

\*Abstract of a paper read before the Minnesota Academy of Medicine, December 7, 1898.

over one cm. at a point just before emerging under the head of the pancreas. Tremendous hemorrhage, though immediate and effective compression was made.

The tumor, which went close to the stomach, necessitated resection of the greater curvature of the stomach for a distance of 7 cm. In removing the deepest part of the tumor, the division line had to go partly through the superficial layers of the pancreas. In and under the head of the pancreas an area of infiltrated tissue had to be left behind and was sewed over. The hepatic flexure was united to the splenic flexure by an end-to-end anastomosis with silk suture.

The carcinoma, which was double the size of a man's fist, was of the type of the carcinoma simplex; no signs of the adenomatous type were found. With the tumor a large piece of healthy colon had to be removed on account of the tumor growing into the meso-colon. The whole omentum had to be sacrificed also.

The operation was made on October 16, 1898, at St. Joseph's Hospital. After a somewhat eventful time of recovery, the patient left the hospital on November 29, in a very much improved condition, having a very good appetite, feeling stronger every day and having gained eleven pounds since the operation.

December 18—It might be added that the patient returned to his home in Havre, Montana, last week, after gaining six additional pounds during the last two weeks. He has absolutely no pain whatever, and is exceedingly satisfied with his improved condition.

### UROTROPIN.\*

By G. M. COON, M. D.,

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It is a well known fact that the first articles on urotropin were issued by Nicolaier in 1895. Others have written but briefly since that time, with the exception of Caspar, of Berlin (*Deutsche Medicinische Wochenschrift*, Nov. 4, 1897), to whom we are indebted for our information as to the clinical use of the drug, as well as to its chemistry.

The chemical composition of urotropin (hexamethylenetetramine) is  $C_6H_{12}N_4$  combining four molecules of ammonia with six of formaldehyde. The formula of their chemical combination is  $C_6H_2O + 4NH_3 = C_6H_{12}N_4 + 6H_2O$ . It appears in the urine as unchanged urotropin and formaldehyde. When added to urine in

bromine water it produces an orange yellow precipitate, due to di-brom-urotropin.

When given by the mouth it has been found in the urine, according to Caspar, in fifteen minutes, while others claim it may be found as early as eight minutes after ingestion, and is still present twelve hours after. It is soluble in one and two-tenths parts of water at 20° C. When in solution is of neutral or very slightly alkaline reaction, and so weak a base that the acid urine has hardly an appreciable action upon it.

Caspar's experiments show varying conditions. After the ingestion of urotropin the drug is always found in the urine, sometimes in the blood; while formaldehyde is found most often in the urine and rarely in the blood. His explanation of this is that combinations of formaldehyde with albuminous substances are formed, causing it to be undemonstrable. An interesting fact given by Caspar in this connection is that the urine of a patient taking urotropin showed both a formaldehyde and urotropin reaction after it had been kept fourteen days. Nicolaier, in his contributions, as quoted by Caspar, brought out two phases of the use of urotropin:

First, that it possessed the power of dissolving uric acid concretions, and secondly, the power of retarding the formation of bacteria in the urine. As to the first point all later writers agree that as a solvent of urinary calculi its results are negative, Caspar claiming that in this respect it is at a par with piperazine, and considerably below the action of glycerine as a solvent. Nicolaier's second claim, by experimental work, has been so thoroughly proven that Caspar remarks: "I have until the present time learned to know no other drug which presents such power of preventing decomposition of urine. The urine of a patient taking urotropin remains for a long time clear, exposed to the air, a property which no other drug possesses, including salol." Nicolaier (See Caspar's article *Deutsche Med. Woch.*, Nov. 4, 1897), reports two cases in which ammoniacal urine under urotropin disappeared, and the urine again became acid. His statement that urotropin in acute cystitis would prevent decomposition of urine has not been substantiated by any of the recent investigations. All authorities agree, however, that in chronic cases of cystitis with phosphaturia, its action seems elective, freeing the urine of phosphates and causing it to remain clear, in some cases, for weeks. I might add here that in two cases, one of a man seventy-seven years old and the other sixty-five, in both of which this condition existed from obstructive cystitis from an enlarged prostate, I have been able, by the use of urotropin given three times a day in ten grain doses, to keep the urine clear of mucus, combining, of course, with

\*Read before the Ramsey County Medical Society, December 26, 1898.

this medication, intravesical douches of nitrate of silver 1-4,000 and as high as 1-1,000 and occasionally a four per cent. solution of boric acid.

One point in the administration of urotropin is noteworthy. We have observed that during its use urotropin has always been found in the urine and frequently formaldehyde. This has suggested the idea of giving rather large doses, not less than seven and one-half grains three times a day to insure some portion of formaldehyde, which furnishes the bactericidal element in the urine, being chemically separated. Perhaps the greatest use of urotropin has been as an antiseptic for the genito-urinary tract preceding operations, particularly in stone of the bladder, internal and external urethrotomies. I will quote Dr. Orville Horwitz's estimate of its efficiency, found in his article on "Perineal Section of Stricture of the Membranous Urethra;" (*Journal of Cutaneous and Genito-Urinary Diseases*, August, 1898). He says: "Should a chronic condition of the urethra exist behind the stricture, associated, as is frequently the case, with cystitis, and it is impossible owing to tightness of the constriction to attempt to produce local antiseptic results by means of the medicated solutions usually employed, much can be accomplished by the administration of urotropin in five grain doses administered four times daily, combined with a glass of Poland water. This remedy should be administered at least four days before the operation is performed, and should be resumed as soon after the operation as the condition of the patient will permit."

Recently, I have used urotropin in ten grain doses three times a day, preceding and following two internal urethrotomies for strictures of the pendulous portion, and in neither case was there rise of temperature or rigors, which in some degree invariably have followed the operation or the subsequent passage of sounds. I mention these cases as merely a corroboration of cases reported in which similar results have obtained.

In the *Journal of Cutaneous and Genito-Urinary Diseases* for November, 1898, Dr. Brewer, of New York, has a paper entitled "The Use of Urotropin in Pyuria," in which he gives at some length three cases which I wish briefly to refer to. The first case was diagnosed as a chronic follicular prostatitis and possibly pyelitis, in which, after the usual routine of urethral and intravesical irrigations and massage of the prostate without relief, symptoms were immediately relieved and the urine cleared by the use of fifteen grain doses given three times a day.

The second case was an acute prostatitis with involvement of the right seminal vesicle, the urine cloudy, showing pus and shreds made up of pus cells, no gonococci, had resisted local

treatment and did not improve until urotropin was used in fifteen grain doses.

The third case reported was of pyelitis of gonorrhœal origin. The urine was cloudy, showing one per cent. of albumen, was loaded with pus and contained a small amount of blood. The patient complained of chills, fever and great weakness. There was marked tenderness in the right lumbar region, with some muscular rigidity. An inflamed, tender prostate, though not greatly enlarged. As in the other cases the usual treatment failed to give a result. Dr. Brewer then began the administration of urotropin, at first in seven grain doses, but the improvement not being rapid, gradually increased the dosage to fifteen grains three times a day, with the result of clearing the urine of pus and albumen, and relieving the other symptoms in about two weeks' treatment. Dr. Brewer does not claim urotropin as a specific in pyuria, but merely states that inasmuch as improvement began only with the administration of urotropin and became more rapid upon increased dosage, it would appear, at least in these cases, to have had an elective action.

Dr. Willy Meyer, in the *Medical Record*, March 5, 1898, in speaking of operations upon the prostate where complicated by cystitis with ammoniacal decomposition of the urine, says: "It is wise to propose operation at once. It cannot be denied that in many instances irrigations of the bladder carried out by physicians, with strictest antiseptic precautions every other day, yield very gratifying results. This treatment is greatly assisted by the internal application of urotropin three to eight times a day in eight grain doses. The favorable influence of the drug is explained by the presence in the urine for many days of formaldehyde, the antiseptic value of which is well known."

Urotropin has been of great service to me in treating cases of deep seated strictures which, perhaps, were really operative cases. In such cases where sounds were passed once or twice a week, ten grain doses of urotropin taken three times a day, one day before and one following the passage of sounds, have apparently prevented the symptoms so commonly following the use of sounds for such strictures, namely, chills, fever and often retention of the urine.

Finally, urotropin is, according to the consensus of opinion, most efficient when given in solution. I find no record, nor have I received complaint from any patient taking urotropin, of an irritation of the digestive tract, and the only effect upon the kidneys thus far observed has been a slight increase in the equantity of the urine passed.

**NORTHWESTERN LANCET.**

A SEMI-MONTHLY MEDICAL JOURNAL.

ALEX. J. STONE, M. D., LL. D.,	} Editors.
WM. DAVIS, M. D.,	

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**JANUARY 15, 1899.****MEDICAL JOURNALISM IN THE NORTHWEST.**

Three months ago there was but one medical journal in the state of Minnesota, and, in fact, but one throughout the whole Northwest, between Milwaukee and Portland, Oregon. That one journal occupied a territory which could be cut up into several good sized empires, and which boasted a population very considerable in numbers, although somewhat scattered in its distribution. Within a few weeks, preceding the epidemic of la grippe, there has broken out an epidemic of medical journals in Minnesota, and today there are four published within the limits of the state.

Notices of two of the new Minnesota journals, the "Albert Lea Medical Journal," and the "Medical Dial," of Minneapolis, have already appeared in these columns. The latest addition to the ranks is by far the most pretentious, "The Saint Paul Medical Journal," a sixty-four page monthly, published by the Ramsey County Medical Society under the editorship of Dr. Burnside Foster, of St. Paul, who is assisted by a large corps of collaborators, for the most part from St. Paul, but including also a number of the prominent medical men of the east and of Minneapolis. The first number opens with a paper by Senn, of Chicago, followed by one by Osler, of Baltimore. The third and only other original paper is by Dr. Schadle, of St. Paul. It is evi-

dent that original articles are not to be the chief feature of the new journal, as its space is principally taken up with a review of the medical literature of the world, presented to the reader in the form of abstracts grouped under the various departments of medicine and surgery. If the reader has his expectations raised by beginning with papers by Senn, Osler and Schadle, he suffers no disappointment when he comes to the abstracts, which have been judiciously made by able men, for the most part specialists in the several departments. If the "St. Paul Medical Journal" can keep up to the standard set by its first issue, it will rank with the foremost medical publications of this country.

The "Lancet" wishes again to extend the right hand of fellowship to its young brethren in the family of medical journals. The addition of all these pages to be filled with medical writing cannot fail to stimulate medical literature in these parts. While hoping that the newcomers will meet with every encouragement, the "Lancet" wishes to say a few words for itself, and it will try to say them modestly.

The inevitable growth of medical literature in Minnesota in the immediate future that has just been predicted should not be allowed to cause forgetfulness of what has been done in the past. As the "Lancet" has been to all intents and purposes the only exponent of the periodical medical literature of the state for now nearly twenty years, it is from its columns that is to be learned what growth has already taken place.

The "Lancet" of 1882 consisted of twelve small pages, filled for the most part with clippings from other medical journals. So little original matter was written in the Northwest that these early numbers hardly averaged a single paper apiece. In 1887, when it came under its present management, the size of the "Lancet" page was increased twenty-five per cent. and the number of pages increased first to fourteen, then to sixteen, and finally to its present size, twenty pages of reading matter, which last year proved to be so far inadequate that eighteen extra pages were published. This increase in size is all due to the increased volume of original writing, for the "Lancet" has for years been made up entirely of original contributions, the shears being used only to fill out incomplete pages.

Is it too much to say that the "Lancet" has had much to do with this growth of medical literature hereabouts, not only by affording opportunities for publication, but also by stimulating the writing of many papers that would not otherwise have been produced? If not, then the many warm friends which this journal possesses have been fairly won. They will not need to be reminded that in making new acquaintances they should not forget old friends, and they may be depended upon to keep the "Lancet" supplied with the contributions which it has so gladly published in the past.

The "Lancet" has endeavored to be a strictly scientific medical journal, devoted to the interests of no narrow locality, but published for the benefit of the whole community. It is the official journal, not of one medical society, but of half a dozen, and it has always represented all the medical societies of this neighborhood equally and impartially. While always ready to defend the interests of the profession as a whole and to announce squarely its position upon all general medical questions, it has no room for trivial sectional issues whose discussion leads to no end but an increase of bitterness between the contestants. It defies anyone to find anything in its columns that would show whether it was published in Minneapolis, Duluth or St. Paul, aside, of course, from the statement of the place of publication required by law. Proud of its record in the past it looks forward with confidence to a future of increased usefulness to the medical profession of the Northwest.

## REPORTS OF SOCIETIES.

### Minnesota Academy of Medicine.

R. O. BEARD, M. D., Secretary.

Stated meeting, Wednesday evening, December 7, 1898, at the Hotel Ryan, St. Paul; the President, Dr. C. G. Weston, in the chair.

Dr. A. W. Abbott, of Minneapolis, reported a curious specimen sent to him for examination, consisting of material curetted from the uterus. He found the tissue to consist of newly proliferated vascular tissue and apparently of some round cells. Examination of the uterus, and further curetting by Dr. Abbott, revealed nothing abnormal. Repeated microscopic study of the first specimen proved that it was a piece of sponge, previously unrecognized, in which a mass of granulation tissue had formed.

Dr. J. W. Little, of Minneapolis, reported a case of puerperal eclampsia, in which albuminuria had appeared two weeks before delivery, and in which three convulsions had occurred, rapidly following each other, after delivery. Dr. Little gave pilocarpin hypodermically, but another convulsion occurred in four hours. Veratrum, twenty drops of Norwood's tincture, was then given hypodermically; but again convulsions appeared, within another four hours; veratrum was repeated, in dose of twenty-four drops; the pulse dropped gradually to forty per minute, and remained below normal for five days, during which time the patient passed very large quantities of urine and showed a gradual improvement. Dr. Little also exhibited a specimen of prostate gland, removed by suprapubic operation.

Dr. Arnold Schwyzer, of St. Paul, read a paper, entitled

### RESECTION OF A LARGE CARCINOMA OF THE TRANSVERSE COLON, WITH LESION OF BOTH MESENTERIC VEINS.

See page 32.

Dr. Schwyzer introduced the patient for the inspection of the Academy, and exhibited the tumor removed.

Dr. A. W. Abbott, of Minneapolis, was asked to open the discussion.

He said that it was impossible to discuss such a paper, since the case was unique, and few, if any of the members could have had any experience in the event. He could only say that the operation was a superb triumph of surgical technique. He wished to ask Dr. Schwyzer if, with the conditions now before him, and the difficulties he now knew he must encounter, he would undertake a second operation of the same gravity.

Dr. Justus Ohage, of St. Paul, said that he enjoyed Dr. Schwyzer's exhaustive paper, and liked to have a chance to criticize him. He thought that the case was an example of the tremendous resistance of which the human being is capable against any and every sort of surgical interference. He thought that the circumstances of the case and its results justified the operation. He cited a case of uterine tumor involving the larger omentum and necessitating the injury and repair of as numerous and as large vessels as Dr. Schwyzer had met with, which he had successfully encountered. He thought the disease, in this case of Dr. Schwyzer's, would return, but the relief afforded and the prolongation of the patient's life were the best excuses for the operation. It illustrated the fact that there is no limit to the surgeon's daring or possible success in the abdominal cavity.

Dr. Gustav Renz said that in assisting Dr. Schwyzer in this operation he had several times doubted the utility of the attempt, but that the

result had silenced his questioning; it was certainly a brilliant surgical triumph.

Dr. Ohage called attention to Dr. Schwyzer's administration of salines immediately following the operation. He saw no reason for this action. He thought that intractable surgery contraindicated the use of laxatives until union was assured.

Dr. Talbot Jones had understood Dr. Schwyzer to say, that in searching modern surgical literature, he had found no case recorded of carcinoma of the transverse colon; he thought that he had contradicted himself in his reference to the percentage of fatalities. He considered that Dr. Schwyzer's success was not accidental, but scientific.

Dr. Schwyzer, in closing the discussion, said that he had been unable in the literature at his command to find a case of carcinoma of the transverse colon recorded; the fatalities referred to had relation to cancer of the colon at large. Answering the questions raised as to the justifiability of the operation, he recalled the desperation of the patient, and his readiness to take any chances for his relief. He knew that the young surgeon was liable to the indiscretions of his enthusiasm, but he thought that under the same circumstances he would undertake the task again. The patient had overcome the fever from which he had suffered and had gained eleven pounds in weight. He thought he had a fair chance of life for some time to come. Answering Dr. Ohage's criticisms of his use of salines, he said that he knew that this was contrary to the usual custom. But, considering that he had found it necessary to suture a large to a contracted portion of the bowel, where impaction was very apt to occur; that the omentum was gone and, with it, all protection against the spread of a general peritonitis; that the chances of infection were lessened through the general dilution effected by the saline; and that, finally, the chances were good that his continuous fine silk sutures would hold; all these things made the use of the Carlsbad salts wise. In this case the bowels could not well be flushed prior to the operation, which made the necessity for the use of laxatives afterwards, greater.

Dr. H. W. Davis, of St. Paul, read his thesis, entitled

**INJURIES IN PARTURITION DUE TO THE OBSTETRIC FORCEPS.**

See page 30.

Dr. A. B. Cates, of Minneapolis, opened the discussion. He said that the question of the propriety of the use of the forceps, and the history of injuries chargeable to this instrument, turned wholly upon the skill of the accoucheur. Undoubtedly, injuries are inflicted by the forceps. In occasions for the high use of the instrument, or for rapid delivery, perineal tears

were apt to occur. He referred to cases of this character, illustrating these facts. Extensive lacerations from this cause were frequently chargeable to unskillful operators. He made it a rule never to delay the use of the forceps after the foetal head had ceased to advance and recede. The absence of recession he thought a cardinal guide. Immediate danger to mother or child should alone dictate the use of instruments.

Dr. Davis, replying to Dr. Cates, demurred to the danger criterion for the use of instruments. He thought their use should be dictated as well by the possibility of diminishing suffering.

**Minnesota Valley Medical Association.**

E. D. STEEL, M. D., Secretary.

Eighteenth annual meeting at Mankato, Minn., December 6, 1898. The President, Dr. H. A. Tomlinson, of St. Peter, in the chair. The session was called to order at 9 a. m., and the Secretary being absent, Dr. J. W. Daniels, of St. Peter, was elected Secretary pro tem.

The annual report of the Treasurer was then read by Dr. G. F. Merritt, and was as follows: G. F. Merritt, Treasurer:

In account with the Minnesota Valley Medical Association:

1897.	Dr.
Dec. 7. To Cash Received from Dr. J. H. James .....	\$101.50
1897	Cr.
Dec. 7. Paid Dr. J. Williams, Postage and Printing, December Meeting..	6.50
Dec. 7. Paid E. D. Steel, One Day as Secretary .....	5.00
1898.	
May 3. Paid E. D. Steel, One Day as Secretary .....	5.00
May 3. Paid E. D. Steel, Printing, \$2.50; Fee Bills .....	4.00
May 3. Paid H. A. Tomlinson, Printing, \$2.25; Postage, \$1.00.....	3.25
Total balance on hand Dec. 6, 1898,	\$77.75.

On motion report was accepted as read. The Society then proceeded to elect officers for the ensuing year. On the first ballot for President, Dr. G. I. Smart, of Blue Earth City, received the highest number of votes, and on motion of Dr. Andrews the ballot was made unanimous for Dr. Smart, and he was declared elected.

On separate motions the Secretary was unanimously authorized by the Society to cast the vote of the Association for the following officers:

First Vice-President, Dr. O. H. McMichael, of Vernon Center; Second Vice-President, Dr. F. L. Durgin, of Winnebago City; Third Vice-

President, Dr. A. C. Jacobs, of Elmore; Treasurer, Dr. G. F. Merritt, of St. Peter.

On motion the Treasurer was authorized to cast the unanimous vote of the Society for Dr. E. D. Steel, as Secretary, for the ensuing year.

The names of the following physicians were proposed for membership in this Association, and they are now before the Executive Committee for action at its next meeting:

Dr. Geo. Ranson, of St. Peter, University of Minnesota, 1895, State Board, 1895.

Dr. E. M. Timmerman, of Mankato, Northwestern University of Chicago, 1898, State Board, 1898.

Dr. W. J. Mayo, of Rochester, University of Michigan, 1883, exempt certificate.

Dr. A. F. Strickler, of St. Peter, University of Minnesota, 1898, State Board, 1898.

Dr. C. F. Tuomy, of St. Peter, University of Minnesota, 1896, State Board, 1896.

Dr. H. Martin, of Minneapolis, State Board.

The minutes of the previous meeting were then read by the Secretary, Dr. E. D. Steel, and there being no objection they were declared adopted.

Next followed a clinic to illustrate a paper, by Dr. L. A. Fritsche, a patient with leucocythæmia, one with pseudo-leucocythæmia, and one with chronic malaria; the paper followed in the afternoon.

The Executive Committee then reported as follows:

We, your Executive Committee, would report favorably upon the names of the following physicians, and move that they be admitted to membership in this Association:

Dr. W. E. McLaughlin, of Willmar, Minn.; Dr. Wareham, of Vernon Center, Minn.; Dr. D. N. Hunt, of Blue Earth City, Minn.; Dr. Killbright, of Sleepy Eye, Minn.; Dr. J. S. Fullerton, of Winnebago City, Minn.

Inasmuch as Dr. Pucklitz, of Sleepy Eye, has left the state we would recommend that action upon his name be deferred.

E. J. DAVIS,  
H. M. WORKMAN,  
C. O. COOLEY.

The several candidates above mentioned were by ballot unanimously elected to membership in this Association, and action upon the name of Dr. Pucklitz was deferred for the reason mentioned.

The committee to draft resolutions upon the death of Dr. D. B. Collins then reported as follows:

On Monday, February 14, 1898, Daniel Babcock Collins, an honored and valued member of this Society, departed this life, no longer to minister unto the sick and afflicted about him, but to be himself henceforth ministered unto, let us hope by the Great Physician, who said: "In-

asmuch as ye have done it unto the least of these my brethren, ye have done it unto me." In the death of Dr. Collins this Society has lost a staunch friend and co-worker, and the community in which he lived a progressive and accomplished citizen, a good physician and a valued member of society.

Dr. Collins was generous to a fault, both of his time and his money. He was a devoted student of medicine and surgery, often leaving his large practice to attend clinics in medical centers in his determination to keep abreast of all the advancement of the profession to which he was devoted heart and soul.

In a just cause he was a firm friend, but he was a defiant and open enemy of all that seemed to him unjust or wrong. He felt bitterly antagonistic towards quackery in every form and to everything that tended to lower the dignity of his profession.

His rugged honesty and originality was manifest in many a remark that stamped him as a deep and unique thinker, and which was also a source of stimulation and keen enjoyment to his friends.

He had a seeming obstinacy and adherence to purpose which was the result of natural good judgment, and from an opinion deliberately formed he rarely swerved except from the conviction that he had made a mistake. He was ever ready to respond to any and all calls of suffering and in the sick room, though he was firm, he was tender and gentle as a woman.

For years his health had been precarious, and he was often obliged to break away from his practice in order to rest and recuperate, yet he was unsparing of his strength when in the harness, many times responding to calls to which a more careful regard for his own physical condition would have led him to turn a deaf ear.

He was born in Dane County, Wis., April 24, 1849, but subsequently removed, with his parents to Milton, in the same state, and was educated in the schools of that village.

In 1864 he joined the union army, Company C, 40th Wisconsin Infantry, and served through the full period of his enlistment.

He began the study of medicine at Rush Medical College, Chicago, in 1868, graduated therefrom in 1871, and immediately began the practice of medicine in St. Peter, Minn., where he continued to live until his death, with the exception of two years, when he resided in Cleveland, Le Sueur County.

When this Society was formed in Le Sueur, in December, 1880, Dr. Collins was one of the charter members and was its Secretary from December, 1883, to December, 1885, and was elected to the highest office in its gift in December, 1890.



He was mustered into the G. A. R. in 1884, was surgeon to A. K. Skon post for many years, and held the honor of being surgeon to the second regiment, M. N. G., for ten years, and was also a member of the Order of Military Surgeons of the United States.

He was a member of the Academy of Medicine, the Nicollet County, Minn. Valley and State Medical Societies. In 1889 he was appointed a member of the State Board of Lunacy Commissioners, which position he held by successive reappointments until his death.

He was for a number of years a member of the Republican State Central Committee and also a member of the following fraternal Societies: Masons, Odd Fellows, K. P., and the Elks.

We realize that at our meetings we shall miss his kindly presence, so long familiar to us, and as a Society we desire to express our regard for him and his work as follows:

Resolved, That in the death of Daniel Babcock Collins, this Society mourns the loss of an honored member and valued counselor, the community in which he lived a valuable citizen and neighbor, and his family, who have our deepest sympathy, a devoted husband. Their loss is also our loss.

J. H. JAMES.  
C. F. WARNER.  
G. F. MERRITT.

On motion the report of the committee was unanimously adopted and a copy of the report was ordered spread on the minutes of this meeting, and a copy sent to his family, and the local papers of St. Peter.

Next followed the President's address.

The next paper was one entitled

#### FUNCTIONAL DISEASES OF THE STOMACH

by Dr. L. D. Webster, of Mankato.

The Society on motion then adjourned until 1:30 p. m.

The afternoon session was called to order at 1:30 p. m.

The bill of Dr. H. A. Tomlinson for \$8.65 was, on motion, allowed, and ordered paid.

Dr. J. D. Fullerton, of Winnebago City, then followed with a paper on

#### PNEUMONIA.

Dr. E. J. Davis, of Mankato, read a paper entitled

#### SUSCEPTIBILITY TO AND IMMUNITY FROM DISEASE.

Dr. W. J. Mayo, of Rochester, followed with a paper on

#### OPERATION FOR THE CURE OF HERNIA.

A paper on

#### OBSTRUCTION AND STRANGULATION OF THE BOWELS BY OMENTAL BANDS

was read by Dr. G. G. Eitel, of Minneapolis.

A case of spasmodic torticollis was shown by Dr. H. M. Workman, of Tracy.

#### ULCERATIONS OF THE CORNEA

was the subject of the next paper, read by Dr. Thomas McDavitt, of St. Paul.

Dr. L. W. Krueger, of Mapleton, then read a paper on

#### MODERN METHODS OF DIAGNOSIS IN THE COMMON DISEASES OF THE STOMACH.

A report of a peculiar abdominal tumor was read by J. S. Holbrook, of Mankato.

The last was a paper by Dr. L. A. Fritsche, of New Ulm, on

#### DIFFERENTIAL DIAGNOSIS OF LEUCOCYTHEMIA, PSEUDO-LEUCOCYTHEMIA AND CHRONIC MALARIA.

On motion, the Society adjourned.

The following members were in attendance: S. D. Webster, E. D. Steel, J. W. Andrews, J. H. James, Z. G. Harrington, E. J. Davis, C. F. Warner, H. A. Tomlinson, G. F. Merritt, J. W. Daniels, C. O. Cooley, W. S. Fullerton, H. M. Workman, O. H. McMichael, A. C. Jacobs, C. J. Spratt, J. E. Moore, F. A. Dodge, O. C. Strickler, G. G. Eitel, U. J. Williams, Marie Merrill, A. O. Bjelland, W. R. Weiser, L. A. Fritsche, D. S. Cummings, J. A. Broberg, Thos. McDavitt, Ira Bishop, W. Jacoby, L. W. Krueger, C. J. Beise, J. S. Holbrook, A. E. Spalding, W. H. Rowe, F. N. Hunt, E. W. Benhan.

Visitors—W. J. Mayo, H. M. Martin, J. A. Helscher, F. D. Brandenburg, F. L. Dugan.

## MISCELLANY.

### The January Magazines.

Harper's Monthly easily leads the world's illustrated magazines, and its January issue is incomparably superior to any of its rivals. It deals with subjects worth considering, and when once in a home of education and culture, it generally remains there while that home exists and can afford a magazine.

However much has been written about the late war, we find much that is new and interesting in Lieutenant Staunton's "Naval Campaign in the West Indies," and Mr. Wilson's "Naval Lessons of the War," for their writers are experts. In "Bismarck—the Man and the Statesman," Mr. Charleton T. Lewis gives a personal estimate of the "Iron Chancellor." Captain T. C. S. Speedy has an interesting topic in "A Glimpse of Nubia, Miscalled the Soudan," and his comprehensive view of that great country and the important problems connected with its reconquest by England, makes his article one of the really noteworthy ones of the month. No less interesting and valuable is Mr. Sidney Whitman's article on "The Sultan at Home," in

which he gives an account of that monarch's daily work, and pays a tribute to his character which the man no doubt deserves, although most civilized men have come to look upon him with utter detestation. Notwithstanding the high praise the foregoing articles must elicit from every reader, a still more important one appears in this number in "Fifty Years of Francis Joseph," by Sidney Brooks. We place this estimate upon the article because of the universal interest in the subject, and because of the satisfactory manner of its treatment.

Mr. Howells, the foremost living novelist, begins a new story in this number, and the opening chapters show the writer at his best, which can hardly be said of his last novel, which appeared in Harper's Bazar.

The Atlantic, always a leader in the literary field, is today a leader in forming public opinion along more than one national line, for whatever subject it touches, it says the best word to be said on that subject. It has ever been an educational force; today it is a political force, not in party politics, indeed, but in the politics of true statesmanship. It is now helping to develop a national life, just as it helped to develop a New England life; and there is no better promise for the future of our government than that the same traditions may underlie the two lives.

The January number opens a new year brilliantly with a discriminating comparison between the Destructive and Constructive Energies of our Government, by President Eliot, of Harvard University, in which a high tribute is paid to the president and his cabinet for their work of the past few months. Dr. George Bird Grinnell deals with the Indian question, and puts forth a plea for our wards that cannot fail to be heard. Mrs. Julia Ward Howe continues her reminiscences, telling of the refined and cultivated homes of her youth, and the people who made them. Her story gains additional interest from the contrast with the picture of Russian society and life as sketched, in the same number, by Prince Kropotkin, whose "Autobiography of a Revolutionist" is now appearing in the Atlantic, and is one of the most intensely interesting and valuable biographical sketches ever written. The Prince's account of his school-days is delightful reading, as is also his picture of a Russian nobleman's family life. Elizabeth Stuart Phelps contributes an epoch-making poem in her "Salutation to Nicholas II." But these are only a part of this excellent issue of the Atlantic.

The Review of Reviews deals prominently with American diplomacy and territorial expansion. The editor reviews the year 1898, and discusses pending national problems from the international view-point. Mr. Stead writes of the young Russian Czar, describing his recent visit

to the "Emperor of Peace," who is in many respects the most important personage in Europe today. Mr. George Reno contributes an interesting sketch of General Garcia, and Prof. Judson, of the University of Chicago, treats quite exhaustively the subject of the government of colonies under our constitution.

The number is so full of timely articles that it is difficult to name even the leading ones. No monthly magazine covers the field of general topics with anything like the thoroughness and ability of the Review of Reviews, and too high praise cannot be given its able editor and managers.

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#### Baker's Adjustable Bedside Table.



The bedside table illustrated above, is so simple, and yet so complete, and is so satisfactory to an invalid, we are sure it cannot be commended in too high terms. It is beautifully made, and while very light and easily and noiselessly handled by either the invalid or the nurse, it will never tip over and will hold quite as much as one ever wants to put upon it. It is also a perfect reading table, and especially for the use of one lying upon a bed or a couch, a simple device holding the book upon the table when inclined. A further description of the table is given in our advertising columns, while the makers are glad to send to any address, a descriptive pamphlet of all the styles in which it is made.

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#### Bronchial and Pulmonary Affections.

The climatic changes incident to this season of the year call for a remedy which is at once effective and agreeable. Bronchial and pulmonary affections are promptly benefited by the use of Gray's Glycerine Tonic Comp. (formula Dr. John P. Gray), and coughs and colds speedily disappear under its use.

It is moreover a stomachic corrective of proved efficiency, promoting assimilation and nutrition, and is of marked value in all phases of debility. It is manufactured by the Purdue Frederick Co., sole proprietors, No. 15 Murray street, New York.

## ORIGINAL ARTICLES.

THREE CASES OF OBSTRUCTION OF THE BOWELS  
BY OMENTAL CORDS.\*

BY G. G. EITEL, M. D.,

Surgeon to Asbury Hospital and Consulting Surgeon to North-  
western Hospital.

Minneapolis.

Interest in surgical lesions within the abdominal cavity continues to grow from day to day, and it may be said that in no other branch of the surgical art have such enormous strides been made within the past decade. The following cases are presented in the hope that they may add another ray of illumination to the subject:

Case I: Female, æt. eight years, American, general health and family history good. On the afternoon of August 10, 1890, the patient with several playmates was romping and turning somersets in a hay-mound, when she was suddenly seized with a rather violent pain in the right side of the abdomen. The discomfort was so great that she was obliged to abandon the sport in which she was engaged and seek her home, where she complained to her mother of the pain, which was steadily increasing and soon became so severe as to render it necessary to send for a physician, which was done at once.

Dr. C. A. Mead, of Bucoda, Washington, came in response to the summons and as the distance was six miles the doctor did not see the patient before about nine p. m. He found her in great pain. There was some vomiting and apparent shock. After an examination, the doctor at once made the diagnosis of acute obstruction of the bowels. He immediately made an effort to bring on an evacuation from the bowels, but failed after having exhausted all the means at his command. The suffering of the patient steadily increased, and the doctor having administered morphia to relieve this returned to his home. On the following day he received word that the child was no better. I saw the patient, in consultation, about twenty-four hours after she had first noticed the pain. I found her lying upon her right side, with knees drawn up, apparent slight distension of the ab-

domen and with marked tenderness in the right iliac region. There was a slight rise of temperature and an expression of anxiety on the face together with occasional attacks of vomiting. After examination I confirmed the diagnosis made by Dr. Mead, but was somewhat at a loss to decide the cause or exact location of the obstruction, the maximum pain and tenderness being situated in the region of the ileo-cæcal valve. Abdominal section was, in our judgment the only means by which the life of the patient might be saved, and the father being absent, we advised the mother of our decision, and urged that the operation be done without delay. The mother, however, refused to consent to an operation, and we left the patient, returning to our respective homes. Two days later I received a telegram requesting me to bring assistants and come on the first train, prepared to operate. There being no train before the next morning it was impossible for us to reach the patient before nine a. m. on the fifth day after the attack, and on our arrival we were informed that the child had died fifteen minutes before. An autopsy was asked for, granted, and then made, revealing the following conditions: Abdomen slightly distended, considerable dark brown fluid in the peritoneal cavity and also in portions of the small intestines. The omentum was twisted into a cord about one-half inch in diameter, and at its lower end was a knot which was caught under the ileum near the ileo-cæcal valve, producing pressure upon the underlying folds of intestines so that obstruction and strangulation as well as extensive tissue necrosis from pressure were present along the course of the omental cord.

Case II. T. D., male, American, æt. twenty-two, farmer, above the average in size and weight, of fine muscular development, was brought to me October 26, 1897, by his attending physician, Dr. E. O. Miller, of Langford, South Dakota, presenting the following history: On the twentieth of Sept. 1897, the patient, while engaged in work on the farm, was suddenly seized with pain located in the right side of the abdomen, and soon after began to vomit. The pain and vomiting increased until he was compelled to send for his physician, who, upon his arrival, examined the patient and at once made the diagnosis of acute intestinal obstruction, and employed such means as were at his disposal to overcome the difficulty, but without avail. Consultation with neighboring physicians was had and it was concluded that the patient should be taken to Minneapolis for an operation without delay.

\*Read before the Minnesota Valley Medical Association December 6, 1898.

The patient was taken to Asbury hospital, and upon examination we found the abdomen greatly distended but no tympanites. On palpation the abdominal cavity revealed a doughy, sodden consistence, while on percussion there was flatness, and some general abdominal pain together with great tenderness on pressure at McBurney's point. The temperature was about normal with a pulse at 130, and very weak. The mind was clear. The patient had grown rapidly weaker on the journey and it seemed as though death might be expected in a few hours. He was, however, determined to be operated upon and was at once placed upon the table. Ether with oxygen was administered, which he took kindly, and was greatly stimulated thereby.

A vertical incision, six inches in length was made over the ileo-cæcal valve. A dark brown fluid was free in the abdominal cavity similar to that found in strangulated hernia. Loops of small intestines, dark in color and greatly distended were at once encountered. In order to reduce their size I drew out several loops of the strangulated intestines and made a number of longitudinal incisions so as to allow the fluid, which was of the same color as that found in the abdominal cavity, to escape, and thus reduce the bulk of the abdominal contents. After having successfully accomplished this, and the incisions having been closed by Lembert's sutures, and the bowels returned, I discovered a tense cord, formed of omental tissue with a tightly drawn knot at the lower end which was caught under the cæcum. I then fully recognized the cause of the condition above described. The cord was severed with scissors and I then dislodged the incarcerated end. After relieving the pressure from within the lumen of the intestine by drawing off the fluid and removing the constricting band, a marked change in the color of the bowel, from dark to one approaching the normal, took place. The entire operation consumed but a short time.

While the patient was under the influence of ether and oxygen he seemed to be in a very good condition. Unfortunately, however, our oxygen gave out or we should have continued its use after the ether was no longer required. Full doses of strychnia and digitaline with whiskey were administered hypodermically, the foot of the bed was well elevated and warm applications were made to all parts of the body, but in spite of our efforts the patient died about three hours after leaving the operating table. The specimen of omental cord which was responsible for the obstruction in this case is herewith presented, and it essentially represents also the specimens found in the cases I and III.



THE CUT SHOWS THE OMENTUM UNFOLDED DOWN TO THE KNOT.

Case III. C. C., male, æt. 59, American, occupation merchant, a resident of Centralia, Washington. General health good, until about six years ago, since which time he has shown evidences of a general failing, not due altogether to his years. He has always enjoyed an excellent appetite until the occurrence of the present illness. On August, 21, 1898, as was his custom, he ate with relish a substantial dinner at six p. m. On retiring at about ten p. m., he noticed a slight pain in the left side of his abdomen, which gradually increased in severity. At four-thirty a. m. the pain had become so intense that he could endure it no longer and so sent for me, as I happened to be in the town on a visit. I saw the patient at about five o'clock a. m., and found him suffering as I never saw any one suffer before. After obtaining a brief history of the attack I gave him a hypodermic injection of morphia one-half grain. A marked resistance of the abdominal muscles of the left side was noticeable when compared with those of the right side. There also appeared to be a slight tumefaction on the left side. He had vomited several times and also tried to have a passage from the bowels, but failed. I gave an enema of one quart of warm water with soap, which was promptly

expelled without any fecal matter. While under the influence of the morphia I thoroughly massaged the bowels, after which three ounces of oleum ricini were given by the mouth, also a Noble's enema. I then informed the patient and his family that if improvement did not speedily follow this treatment, abdominal section should be made without further delay. As the patient failed to improve everything was made ready for operation and the best counsel available was secured. While the patient was making his will and dictating to his attorney, and in great pain at the time, he stretched himself in such a way as to draw up the abdominal contents, when he noticed something give way, which at once produced such a sense of relief that he remarked to his attorney, "I am relieved and will be all right." A consultation was held shortly after, at ten a. m., when it was concluded to wait, as no immediate indication for operation seemed to exist at that time, and we would await the result of the oil which had been administered. At eleven a. m., another Noble's enema was given, but without any result. At half-past two p. m., the patient was placed in a vertical position, head downward and so held by a strong man while the abdomen was again thoroughly massaged with very little discomfort to him. At three p. m., three drops of croton oil were given in a capsule. Strychnia and digitalin were also administered hypodermically for the heart, which was rapid and feeble. No results were obtained from the cathartics or the enemas and the pain gradually returned at one a. m. and increased. I was called to see him again at five-thirty a. m., and found him in severe pain, hiccoughing and vomiting, with abdomen greatly distended and the general condition decidedly worse. Another hypodermic injection of morphia was given to ease the pain, but the patient was also advised by me at the time not to be misled by the feeling of comfort afforded by the drug, and thus underestimate the gravity of his condition. Counsel and assistants were again summoned and everything made ready for immediate operation.

With the assistance of Dr. A. T. Baker, of Centralia, and Dr. J. T. Coleman, of Chehalis, Wash., abdominal section was made by me at about half-past nine a. m. A five inch vertical incision outside of the left rectus abdominalis muscle was made. The small intestines were found distended with fluid, highly congested, and in portions presenting a rather dark color. A portion of the omentum was caught under a segment of the small intestine, and the intestines were held in a sling, as it were, by a cord of omental tissue, the end of which was bulbous. After removing this cord a thorough examination was made of the alimentary canal, but nothing else was found which could be the

cause of the obstruction. The abdominal incision was closed in the usual manner, the patient returned to bed and there was no more vomiting, hiccough, or return of the pain. Three hours after the operation the bowels moved spontaneously, which was followed by several more copious evacuations within the next few hours. Nourishment was taken freely on the afternoon of the day of the operation without distress and the patient seemed to react quite well from the operation, except in the matter of his heart, which was weak before, during and after the operation. Cardiac stimulants were judiciously employed with apparent benefit at first, but on the fourth day the heart failed to respond to these, the patient dying the following day.

Acute obstruction of the bowels is a rather common affection. The three cases here reported have led me to the conclusion that this variety of obstruction is either a rare or uncommon one, or one that has been very much overlooked. Perhaps the most exhaustive table of statistics bearing upon this subject is that which was collected and compiled by the late Dr. W. T. Brinton, of Philadelphia, who found from an analysis of twelve thousand post mortem examinations taken promiscuously, that excluding hernia, intestinal obstruction caused death in one of every two hundred and eighty cases. The percentage of fatal lesions given in their relative proportion is as follows:

Due to intussusception, 43 per cent.

Due to internal strangulation (by bands, etc.), 31.5 per cent.

Due to strictures and tumors implicating the intestinal wall, 17.54 per cent.

Due to twisting of the gut upon itself, 8 per cent.

I have searched the current literature treating of bowel obstruction and likewise have made numerous inquiries among leading surgeons, both east and west, and have thus far been unable to find omental bands or cords of a non-inflammatory character given as one of the causes of intestinal obstruction.

Ball gives a concise resume of quinin amaurosis which may be of interest to the general practitioner. The dose causing blindness varies from fifteen grains to an ounce, in twenty-four hours. According to DeSchwinitz there have been reported up to the present time sixty-nine cases. The symptoms are: Total blindness following the ingestion of large quantities of quinine, with pallor of the optic discs, contraction of the visual fields, and widely dilated pupils—which do not contract upon exposure to light. The prognosis is favorable so far as central vision is concerned.—Western Clinical Recorder.

## SOME CAUSES OF MATERNAL DYSTOCIA.\*

By R. E. CUTTS, M. D.,

Minneapolis.

It is not the purpose of this paper to enumerate the classical causes of maternal dystocia, but rather to attempt to explain why one woman with an apparently large pelvis will require surgical relief at confinement while another with the same pelvic measurements and an equally large child will need no assistance whatever. Under this class of cases come those so frequently met in which delivery is possible in the course of time but which are apt to result so disastrously to the child and injuriously to the mother. To recognize these cases in time to give them the best treatment requires a practical knowledge of scientific midwifery.

The physician is too apt to look upon all labors as normal and when engaged beforehand to attend a woman at confinement to think that his duties do not begin until labor actually commences, and then perchance he simply makes out the presenting part and the condition of the cervix. To be sure labor is a physiological act, but our duties as physicians are to ascertain beforehand if there is anything obstructing or preventing this physiological act from taking place. Often this investigation is left until the forces bringing about labor are exhausted and delivery must be accomplished in an entirely artificial manner.

I mention this simply to condemn the practice of delays, for by delaying conditions are brought about that limit our choice of operative relief, and both mother and child become greatly weakened.

Our medical schools, with their lengthened courses, are giving much clinical instruction in medicine, surgery, gynæcology and ophthalmology, while in obstetrics a student may consider himself fortunate if he sees a confinement or is permitted to attend one by himself without any instruction. Every medical school should give as thorough clinical instruction in obstetrics as in any other branch of medicine, and every graduate should be able to palpate a fœtus, to ascertain its position, presentation and relative size, as well as to do thorough pelvimetry.

With an accurate knowledge of fœtus and pelvis in a given case the physician is prepared to elect the line of treatment which will be best for mother and babe. Omitting the causes of marked pelvic dystocia as given in our textbooks, such as *justo minor pelvis*, flattened pelvis and Nægele pelvis, let us consider some other causes that are much more frequently re-

sponsible for difficult labor as met in every day practice.

First cause: The obliquity of the plane of the superior strait of the pelvis to the axis of the body. Every careful and observing obstetrician will notice that the plane of the superior strait in some pelves approaches more nearly a right angle to the axis of the body than in others. Other things being equal, a child could be delivered more easily through such a pelvis than through one in which the plane approached the axis of the body. The reason for this is readily seen, since the propelling force strikes the plane of the superior strait at an oblique angle, and consequently is not nearly so effective while the foetal head is driven against the pubes.

Through the kindness and assistance of Dr. C. A. Erdmann I have been able to get the angle quite accurately in ten female pelves which he has in his laboratory at the State University. From these we find that the line joining the spine of the fourth lumbar vertebra and the superior margin of the pubes practically lies in the superior plane of the pelvis. Consequently we have points readily obtainable on the living subject, and all that is necessary to find the variation of this plane is to get the angle this line makes with the axis of the body.

There is no instrument that I know of for measuring this angle on the living subject aside from a rough device I have made that has permitted me to get the angle quite accurately. From the measurements in a few unselected cases I find this angle to vary from 45 to 66 degrees.

Second cause: Lordosis of lumbar vertebrae, and more particularly the undue prominence of the last lumbar vertebra.

The variation in the anterior curvature of the lumbar spine that one meets in investigating different specimens is remarkable. In fact no two are alike. From a normal anterior curve, which by the way is far from a fixed one, we find it varying to the excessive curve which constitutes a lordosis. Again we find instead of all the lumbar vertebrae participating in the curve, some one or two become unduly prominent. These are apt to be the fifth lumbar or fourth and fifth lumbar, and are very marked factors in producing dystocia.

The dried specimen I have here shows this variation to some extent. In this condition we not only have more or less shortening of the true conjugate, but an interference of the foetal presenting part in engaging the superior strait, since the fœtus is forced anteriorly and impinges against the pubes.

Again, according to the laws of mechanics we find the propelling force divided and the

\*Read in the Section of Obstetrics and Diseases of Children of the Minnesota State Medical Society, June 17, 1898.

effective element varies with the curvature and the angle of impaction, i. e., of the head striking the pubes.

With these conditions of the lumbar vertebrae we find more or less rotation of the pelvis on its traverse axis—an important element in the cause of variation of the plane of the superior strait to the axis of the body.

Spondylolisthesis, which we will not consider in this paper owing to its rarity, is probably brought about by an exaggerated prominence of the fifth lumbar vertebra, simply reaching the stage where the ligaments failing to do their duty the vertebra slips down and anterior to the sacrum. While this condition rarely occurs, the anterior projection of the fifth lumbar vertebra may be found in the various stages approaching the characteristic dislocation of spondylolisthesis.

Third cause: Condition of the pubes.

First, as to obliquity of the plane of the pubes to the plane of the superior strait of the pelvis. Normally the pubes is placed at about a right angle to this plane, but from this position we may have either a tilting of the superior part of the pubes toward the sacrum, causing a true conjugate to be diminished and a consequently narrowed inlet, or the same condition of the inferior part of the pubes causing a diminution of the diameter of the inferior strait.

With the first, we find an interference with the presenting part engaging, but after having passed this point delivery is easy and rapid. With the latter the engagement may be easy and the presenting part reach a point near the vulva, but here it is held between the lower margin of the pubes and the sacrum, and unless the uterine contractions are especially strong, low or medium forceps will have to be done.

Other conditions of the pubes to be noted are its length and thickness.

The length of the pubes and subpubic ligament varies from one to three inches. With the long pubes the difficulty in delivery is encountered in the middle and lower part of the pelvic canal, and accompanied with the condition just mentioned in which the lower part of the pubes is inclined toward the sacrum, may produce severe dystocia.

The thick pubes is more frequently found in women of stout build and having the evidence of a heavy skeleton. In connection with the thick pubes we may have a cartilaginous ridge over the symphysis as thick as a quarter of an inch, as seen in one of the specimens in the university laboratory. In doing pelvimetry these points must necessarily be considered, else an external conjugate measurement may be very misleading.

To summarize: Some common factors in producing distocia are:

First. Obliquity of plane of superior strait of pelvis to axis of the body.

Second. Lordosis of lumbar vertebrae, and more especially the undue prominence of the last lumbar vertebra.

Third. Condition of the pubes.

A. Obliquity of the plane of the pubes to the plane of the superior strait of the pelvis.

B. Length of the pubes and subpubic ligament.

C. Thickness of the pubes.

The treatment of the conditions mentioned above in which engagement of the presenting part is interfered with, should be, just as soon as the cervix is sufficiently dilated, version. If delay is practised in these cases the membranes rupture, permitting the amniotic fluid to escape, the uterus soon contracts on the foetus so firmly that version is dangerous or impossible and high forceps operation must be performed, which is always serious for the interests of the child.

I wish to report, briefly, two cases representing some of these conditions.

Case I. Mrs. P. American. Age 35. Family history negative. Early history negative. Had given birth to three children, all requiring forceps delivery, one of whom died during childbirth. Patient, a light blond, of average height and a rather square build. Pelvimetry showed the external conjugate to be eight inches and other measurements slightly above the average.

No external measurements would account for the previous dystocia. At this confinement, which was in 1895, the amniotic fluid began coming away a couple of days before any active signs of labor commenced, so that the uterus was firmly contracted on the foetus before the cervix began to dilate. The head could not be made to engage and version could not safely be performed, so as soon as the cervix would permit, forceps were applied with much difficulty, and the babe finally delivered. When the head became sufficiently moulded to pass the superior strait no further difficulty was experienced.

The dystocia in this case was due to the marked anterior projection of the last lumbar vertebra, which not only shortened the true conjugate but crowded the head anteriorly against the pubes. This condition, together with a marked obliquity of the plane of the superior strait to the axis of the body, caused the foetal head to impinge almost squarely on the pubes, thus losing practically all of the propelling force.

Two years later I was called to attend the same woman at confinement.

She had been having slight pains for twelve hours, and finding the cervix dilated and an

occipito-posterior position, with no attempt at engaging, I immediately summoned assistance, had chloroform administered, ruptured the membranes, did version and delivered with no difficulty whatever.

Case II. Mrs. K., patient of Dr. Erdmann. German. Age 30. Family history negative. Early history negative. Two previous confinements resulted in death of children. Both were long delayed, and the second was finally delivered with instruments, while the first was delivered by embryotomy after severe mutilation of the maternal soft parts through attempted forceps delivery.

In July, '96, I was called early one morning by Dr. Erdmann. The patient had been in labor three or four hours, and while contractions were strong the head would not engage, but in spite of all manipulation would ride out over the pubes. Chloroform was administered, version was performed with difficulty due to contraction of the uterus, the child delivered somewhat asphyxiated, but was soon resuscitated. In this case the body of the last lumbar vertebra projected so far anteriorly that it felt like a tumor, and it was with great difficulty that the hand could be passed above it and curved back toward the hepatic region of the abdomen to reach the foetal foot. Eighteen months later Dr. Erdmann and I again attended the same patient at confinement. Contractions set in hard, the cervix soon softened, but the head would not engage. Chloroform was again administered and an easy version performed. In this case dystocia was not so much due to the shortened conjugate, as the version proved the head could easily pass through the superior strait, but to the fact that the head was crowded anteriorly and struck the pubes so squarely that the propelling force was nearly all lost against it.

While many more cases could be cited showing dystocia produced by the conditions enumerated, these two will suffice to demonstrate the line of treatment to be followed where the contraction is not so great as to prevent delivery without enlarging the pelvic canal.

### MEDICAL TREATMENT OF ACUTE PELVIC INFLAMMATION.\*

BY GEORGE C. BARTON, M. D.,

Minneapolis.

In reviewing some of the literature on the subject of gynecology for the past year, I think two things impressed themselves upon us. One is a more conservative method in gynecological surgery, and the other is the fact that while we

have many new operations described, we have not many new methods reported for the medical treatment of the female pelvic organs; so that gynecology has become practically only a synonym for the surgery of the female reproductive organs. I do not want to be considered as saying anything against the successes achieved by that branch of gynecology; but on the other hand I do want to impress upon the general practitioner the fact that there is a medical side of the subject, and while we can do wonderful things with our surgery, I believe we may do some very striking things by judicious medical treatment.

One of the diseases to which gynecologists are giving a great deal of consideration is pyosalpinx, or in general terms, pus in the pelvis. One is advocating the vaginal route as the best method, while another says that the only scientific method of ridding our patients entirely of this terrible condition is by the abdominal method. I do not want in this paper to enter into a discussion of these methods, or give my reasons for thinking that either of them is preferable to the other, but I want to call your attention to a method of medical treatment which I believe is superior to any other I know of in cutting short the condition which gives rise to what afterwards necessarily becomes a surgical case.

With all due regard to the statistics reported by operators in pus cases, there is a class of these cases that universally die when operated upon by the abdominal route, and which I will call for the purposes of this paper, acute cases. A few years ago, while in the east, I took special pains to keep a record of all cases of this kind I saw operated upon by as good men as any in the country, and all the cases that I could follow, which was a majority of them, died. The cases to which I refer were like this: Mrs. X. was confined, gave birth to a normal, healthy child. A few days later had a chill, pain in the groin, fever and all the symptoms of a pelvic inflammation. A homœopathic physician treated her for four weeks for typhoid fever, at the end of which time a regular physician was called in, and he pronounced the case one of pus tubes. One of our leading gynecologists was called and operated the next day. The tube on the right side was greatly distended with pus. In trying to free it, although as careful as it was possible to be, it ruptured, and the patient died the following day. A series of cases of this kind made me think almost any line of treatment would give as good results.

I want now to make the general statement that whatever is the germ, or by whatever means this germ enters the part, or wherever it finds its lodgment, it acts as the irritant, but without the materials furnished by the blood, would produce no injury. So then, this would be no different from the same irritant found in tissue at any oth-

\*Read in the Section of Gynecology of the Minnesota State Medical Society, June 17, 1898.



er point. Some little time must elapse before the material furnished by the blood, together with the disease producing germ, forms pus. Any line of treatment which would arrest the disease at this point would prevent the danger to life which must follow, and, in case of recovery from the operation, the loss of important organs. That an arrest of the disease is possible is proven by the fact that nature unaided will sometimes destroy the germ and remove the inflammatory product. A few years ago I read a valuable work on uterine displacements by Schultz, in which he said that in retrodisplacements of the uterus with adhesions, the adhesions may often be absorbed and the uterus replaced by the application of strong solutions of iodide of potassium on cotton tampons. This led me to think that if iodide of potassium had the power to absorb organized deposits, it must be even more efficacious in absorbing recent inflammatory products. That it has this power I have had more than one convincing proof, both in my own cases and those of other physicians. One striking case was a patient of my friend, Dr. Sweetser, who had been under the treatment of a prominent gynæcologist of Chicago, and who was told that the only way she could be relieved was by an operation. She refused to be operated upon, and the doctor ceased his treatments. Dr. Sweetser found the uterus retroverted and bound down by adhesions. At my suggestion the doctor tried iodide of potassium, with the happy result of being able to replace the uterus, and the lady found herself to be well. With these facts in mind I determined to try the treatment on the first case that presented itself. In this case the treatment was so successful that I have used it on a number of cases since without any failures; a few of these I will now report.

My first case was a Mrs. A., who had been delivered of her first child by a lady physician, who for some reason curetted the uterus on five consecutive days without, so far as I could find out, any antiseptic precautions. She was taken with a chill, had fever, pain in the right ovarian region, constipated bowels, and for some time had been having sweats. I saw her in the fourth week of her sickness. She had the appearance of being a very sick woman. Had a temperature of  $103^{\circ}$  and a fraction; was sweating; was very tender over the lower part of the abdomen, and especially tender over the right inguinal region, where there was a distinct prominence above the pubic bone. On making a digital examination I found the uterus large and fixed, with a large mass in the right tubal region. This patient had been treated in the regulation way for over three weeks; opiates, laxatives and hot douches had been given her without any benefit. I at once commenced the use of a drachm of iodide of potassium to the ounce of equal parts

of glycerine and water, using a tampon every other day, in the intervening day hot douches. I was surprised to see how quickly the pain and temperature was lessened. She made a rapid and uninterrupted recovery. I have kept track of her for a couple of years and she has remained well. When I last examined her before she had quit treatment, the mass had entirely disappeared.

The second well marked case was that of a young lady who became pregnant and visited one of our fair city's curses, an abortionist, who produced an abortion upon her, and in a couple of days turned her out upon the street. In a few days she had a chill with severe pain in her right side in the region of the ovary and tube. I saw her next day; she was suffering intensely; had a high fever; was very tender over the lower abdomen. I had her removed to the hospital, and the next morning dilated and curetted the uterus. For a few days she seemed as though she was going to have no further trouble; her temperature came down and her pain was relieved. At the end of this time her pain became worse, and she began again to have a little fever. On examination I discovered an enlarged tube, and began at once the use of my iodide solution with the same result as in the previous case. Although the recovery was not so rapid, it was apparently just as complete, the tube becoming normal in size. I have heard from this girl on several occasions, and she was still well when last I heard, which was over a year after the origin of the trouble.

My third case was a Miss C., who had contracted chancroids a few months previous. Had a suppurating bubo, but had entirely recovered from this, so I hardly think it had anything to do with her following trouble. I do not know for sure whether she had had gonorrhœa at any time or not, but suspected that she had. She was taken suddenly with a severe pain in the right ovarian region with a rise of temperature, constipated bowels and a good deal of tenderness over the lower part of the bowels. She was given morphine to relieve the pain, and salines to open her bowels. I was undecided at first as to what the trouble was. The next day I made a vaginal examination and found the right tube enlarged and very tender. I at once commenced the use of my iodide solution with the same result as in the previous case. I kept track of this patient for a long time and know that she did not have any more trouble. The tube returned to its normal size.

The fourth case I am going to report is a more recent one; that of Mrs. D., a young married woman who has never had any children. Something over two years ago she came to me suffering with dysmenorrhœa which she wanted

relieved, and was very anxious to have a child. I dilated and curetted the uterus, which relieved her dysmenorrhœa, but she did not become pregnant. She says she was in good health up until a couple of months ago, when she began to have leucorrhœa, and was suddenly taken with a severe pain in her left side. She suffered so intensely that they had had two other physicians to see her before I arrived, they having sent for me in my office hour. She was very tender over the lower part of the abdomen and had a temperature of over 102°. Bowels were constipated. I at once gave her an anodyne and ordered salines for her bowels. I examined her by the vagina and found quite a mass on the left side of the uterus high up, and a smaller one on the right side. I at once commenced with the iodide solution, and as she seemed to have so much trouble I decided to try the use of the solution every day, but was compelled to desist on account of its irritating the vagina. I then used it every other day for a few times, and then twice a week. The pain ceased and temperature became normal, after the first few treatments the masses gradually but rapidly disappearing. One of the features of this plan of treatment which delights the patient is the rapidity with which she is relieved from her pain.

In my first case reported, the patient had suffered for nearly four weeks, and was pale with a hectic flush upon the cheek. She had fever every day as she reported, ranging from a hundred to over 103°. In a week's time her temperature was normal and pain gone. I treated her five weeks and discharged her well.

My theory with regard to the action of the iodide is simply that the tissue of the pelvis through the lymph becomes so thoroughly saturated with the salt, and likewise the food upon which the disease producing germ lives, that it dies. After it dies it is no longer an active irritating agent, and nature takes care of the deposit, the result of the irritant, by removing it. This is probably aided by the osmotic action, which is evidently increased by the treatment used. My first case had many evidences of the presence of pus in the pelvis, so that the question might arise as to whether pus may be removed from the body by the use of drugs. I am not prepared to answer that question, but see no reason why this might not take place in the pelvis, where, by the active absorbing surface of the vagina, the iodide may act directly upon the pus, destroying the germ, and rendering it an innocuous substance. If, however, the pus has been walled off and surrounded by a thickened pyogenic membrane, I then think it highly improbable that the pus could be removed by the aid of medicine.

## THE RECORD OF A CASE OF PERVERTED APPETITE WITH ESPECIAL REFERENCE TO THE TOLERANCE OF THE ABDOMINAL VISCERA TO THE PRESENCE OF FOREIGN SUBSTANCES.\*

BY A. F. STRICKLER, M. D.,

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St. Peter, Minn.

Chas M., age 37, a primary defective, came to the Hospital in fair general health.

He was actively maniacal for about six years and he became more and more demented during the following six years.

He had incontinence of urine and some œdema of the ankles and legs during the following six years, and his urine showed a trace of albumen; small hyaline, granular and blood casts. Crystals of uric acid were present. He had several small abscesses and frequently the rectum became prolapsed.

In 1894 he had a severe attack of bronchopneumonia. Both lungs were involved. The temperature varied from 102° to 106° F., and he was comatose for ten days. He recovered after a prolonged convalescence and apparently regained his usual health.

During the past few years he was confined to bed several times. His eyelids and ankles were œdematous and his temperature reached 104°, pulse 90, and respiration 30.

He was persistently swallowing buttons, rags and anything that could be easily picked up and concealed about his person.

A little more than a week before his death he became suddenly ill. He vomited a small amount of partially digested food, and persisted in putting his finger into his mouth as though reaching for some foreign body or with the intention of producing mechanical emesis.

He was so demented nothing could be learned of the subjective symptoms. On going to bed his temperature was 103.4°, pulse 120, and respiration 30. His temperature remained elevated, the moting remissions being about 1°. His bowels moved several times a day without laxatives. The stools were semi-fluid and offensive in odor. They contained particles of undigested meat, leucocytes in clumps and infiltrating the epithelial cells.

After the first day his abdomen became very sensitive to palpation, especially over McBurney's point, and the following day a small, firm tumor could be felt.

The patient took the low dorsal position in bed with his right thigh partially flexed on the

\*Read before the Minnesota Academy of Medicine, November 2, 1898.

abdomen. The bowels became very active and the sphincter relaxed so that about 5 c. m. of the rectum protruded. This, however, was replaced, and by moderate hypodermatic injections of strychnia the muscle regained its tone and the bowel remained in place till a short time before death, when it again became prolapsed.

The abdomen became distended and tympanitic and his features were pinched; face pallid and anxious; eyes sunken and his skin covered with a cold, clammy sweat. The pulse became rapid and feeble. The tongue was dry and swollen. He took a large quantity of milk each day and drank considerable water. His bowels remained active; the urine highly colored and concentrated.

The advisability of an exploratory operation had been considered, but on account of his general debility and indications obtained from the urine analysis, an operation was not attempted.

The tumor gradually increased in size and could be readily outlined, filling the entire right side, while the abdomen became tense and tympanitic.

A large hypodermic needle was used and by aspiration a thick, putrid, semi-fluid material was obtained from the tumor. On microscopical examination this proved to have all the characteristics of feces, containing partially digested vegetable cells (bean) and swarming with bacteria. Among the bacteria isolated were the colon bacillus, proteus bacillus and streptococci.

A few days before his death he developed an annoying and persistent hiccup and he vomited shortly after taking food. At this time he lost considerable blood with the stools, in all about 800 c. c. He grew very much weaker and died in collapse.

An autopsy was made twelve hours after death and the following conditions were found in the abdomen:

The omentum was spread out over the intestines and was adherent to the abdominal wall and the anterior surface of the tumor described below.

The spleen weighed 93 grams. The parenchyma was softened and small emboli were scattered throughout.

The liver weighed 2,208 grams. The bile duct was patulous; bladder small. The surface was mottled and numerous adventitious vessels were seen over the surface. The capsule was adherent and the outline of the lobules indistinct.

Each kidney weighed 141 grams. In the right, small cortical cysts were noted and the capsule was thickened and adherent. On sectioning, the outline of the cortex was obliterated and only three of the pyramids could be defined. The same physical condition existed to a less marked degree in the left.

The stomach walls were very much thickened and the mucous membrane was thrown into but few folds and also showed indications of a chronic inflammation.

The small intestines were distended with gas. A large tumor which occupied the whole of the lower portion of the abdominal cavity, proved to be an enormously distended cæcum. The ascending colon was obstructed with foreign bodies and scybala.

#### THE CUT SHOWS THE CONTENTS OF THE CÆCUM.



The following is a detailed list of the foreign bodies found in the cæcum and lower portion of the ascending colon:

One branch of an oak tree 20 c. m. long and 1 c. m. in diameter, found extending through the ileo-cæcal orifice into the colon; 4 shirt waist bands; 6 strips of cloth 37.5 c. m. by 7.5 c. m.; 14 strips, 37.5 c. m. long and from 2.5 c. m. to 5 c. m. wide; 6 strips, 70 c. m. by 10 c. m.; 2 bunches of grass; 2 pieces of newspaper; 1 piece of writing pad (card board), 2.5 c. m. by 7.5 c. m.; 1 piece of china, 2.5 c. m. wide, another, 2.5 c. m. by 4 c. m.; 4 sticks of wood 7.5 c. m. by 6 c. m.; 14 large shirt buttons; 1 mold; 5 coat buttons; 5 wire nails, 5 c. m. long; 1 needle, 6.5 c. m. long; 1 portion of suspender buckle, 5 c. m. by 2.5 c. m.; 2.5 c. m. of thick wire; 1 stone, 1.8 c. m. in diameter, and 1 piece of coal, 4 c. m. by 5 c. m.

The appendix was destroyed and adhesions extended to the intestines and omentum. The gut was gangrenous at several points.

The sigmoid flexure contained scybala. The peritoneum was thickened and adhesions extended everywhere.

The pancreas was adherent to the jejunum by a mass of connective tissue and fat and contained several needles in its structure.

## ANTEPARTUM HEMORRHAGE.

## Report of a Case.\*

BY C. R. KEYES, M. D.,

Duluth, Minn.

On the morning of March 18, 1898, about three o'clock, a. m., I was called to see Mrs. A. B., age 35 years, pregnant with her fifth child.

The following history was obtained: Her last menstruation occurred about June 18, and was light in quantity. Early in October the lady thought she felt the foetal movements and had fixed the date of her expected confinement for the last of February, about three weeks before the date of my call. Her former pregnancies and labors had been without unusual incident. Her health had been excellent during the present pregnancy and she had been quite actively employed in attending to her household duties, although not obliged to do any heavy work.

On the seventeenth she had felt unusually well and had walked several blocks, but did not remember having slipped or having suffered any unusual strain. About 2 o'clock a. m., on the eighteenth, she was awakened by a gush of fluid from the vagina. On investigation the fluid was found to be blood, and the quantity sufficient to saturate her night gown.

She arose and used the vessel, passing a considerable quantity of blood, and afterwards saturating several napkins. On my arrival the hemorrhage had nearly ceased. In answer to my inquiry, the lady, who, by the way, was an intelligent woman, thought she must have passed nearly a quart of blood. Unfortunately, the vessel had been emptied before my arrival, but, judging from the condition of the patient, which was not at all alarming, the quantity must have been much less than that.

There had been no pain or indication of the beginning of labor. On vaginal examination the os was found to be sufficiently patulous to admit the tip of the finger. The head was presenting and the edge of the placenta could not be reached by the examining finger. As there was very little hemorrhage at this time, I decided to keep the woman quiet in bed and await developments, remaining within call until morning.

During the next two days there were occasional very slight pains and a little bleeding. On the third day, both having ceased, the patient was allowed to leave her bed. On the morning of the twenty-fifth labor pains came on, and after a rather slow labor she was delivered of a fine, healthy boy, there being no further trouble from hemorrhage.

\*Read in the Section of Obstetrics and Diseases of Children of the Minnesota State Medical Society, June 17, 1898.

On careful examination of the placenta it was found that the hemorrhage was caused by the rupture of the circular sinus of the placenta or a large branch thereof. The ruptured vessel was located about one and one-half inches from the placental margin. The vessels were quite tortuous at this point. A portion of the placenta an inch or more in width, and extending from the point of rupture to the placental margin, had been detached by the blood clot; with the exception of this spot, the placenta appeared as though detached after the birth of the child.

In looking over the literature at my command, I find little or no mention made of rupture of the placental sinus as a cause of ante partum hemorrhage. Gould, in his Year Book for 1898, states that there are twenty-two cases on record in which the hemorrhage was attributed to this cause, but I have none of the reports at hand. The accident is either very rare or attention has not been called to it as a cause of ante partum hemorrhage.

My object in reporting this case is to call attention to the subject that others may be led to more closely investigate it.

Dr. L. T. Riesmeyer, of St. Louis (Medical Review, October 22, 1898), calls attention to the growing tendency to attribute articular rheumatism to an infection with pyogenic microörganism. He reports in detail three cases in which a demonstrable primary inflammatory focus preceded the attack, the first patient having suffered from a purulent catarrh of the cervix uteri, the second from a parametritic suppuration, and the third from follicular tonsillitis before the occurrence of the rheumatism. The author believes that the prompt action of salophen in the treatment of these cases, also speaks in favor of the microbic etiology of rheumatism. He regards salicylic acid, of which salophen is a derivative, as one of the few true specifics in medicine. Its administration in the pure form is objectionable, however, on account of its irritation of the stomach. The salicylates, too, have irritating properties and produce disturbances of digestion, anorexia, nausea and a heavily coated tongue; they also have a depressing effect upon the heart and irritate the kidneys. These disadvantages are overcome by the administration of salophen which passes through the stomach unaltered and separates in the intestine on account of the alkaline contents into salicylic acid and acetyl-paramidophenol. It produces no heart depression nor any other untoward symptoms, and may be advantageously administered in all cases where salicylic acid is indicated, that is, for the purpose of diminishing the activity of microörganisms which produce inflammation, fermentation and putrefaction.

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**FEBRUARY 1, 1899.****NEW MEDICAL LEGISLATION.**

Appended to this article will be found three medical practice acts: First, the present law as it stands on the statute books; second, the new law which it is proposed to try to pass in place of the present one; third, the bill which the osteopaths have introduced and which they are very likely to succeed in passing unless the medical profession of the state exerts itself with the utmost vigor in opposition, for it is well known that they are making a powerful effort to put the bill through and that they are backed by plenty of money and a strong lobby, besides having in their favor the strong prejudice that always exists among legislators against the medical profession, a prejudice that can be accounted for only as envy of a body of men raised above the common level by education and mental endowments.

The old law is published to show how it is attempted to improve it by the new bill. Experience showed that there were several defects in the old act and the new one has tried to avoid them. Chief among these defects was one recently taken advantage of in the courts, the first paragraph of Section 3, viz.: "It shall be unlawful for any person to practice medicine in this state without a license from said board, or without having filed with said board an affidavit

setting forth the times and places in which he or she has practiced medicine within the state prior to the passage of this law." The second paragraph of Section 4 of the revised new law requires that all persons not already licensed must pass the prescribed examination before they can practice, and must conform to the further requirement of having studied medicine for four years if graduating later than 1898. The new bill further increases the fee for examination from ten dollars to twenty dollars; it provides for no examination at all in therapeutics or materia medica; it makes no mention of homeopaths upon the board, but provides that not more than seven of the twelve members shall be of any one school of medicine; it defines unprofessional or dishonorable conduct; it provides that an unlicensed practitioner shall be debarred from collecting his fees by legal process, from testifying as a medical or surgical expert in a court of law, from holding any medical office in the state or enjoying any of the privileges, rights or exemptions granted to physicians and surgeons; it defines what constitutes the practice of medicine; last, but not least, it provides that the secretary of the board shall be charged with the duty of enforcing the act, county attorneys being required to conduct prosecutions at the secretary's request. By this provision it will no longer be possible to say that no one is to blame when complaints that the law is being violated are ignored. The secretary of the board will now be responsible.

Two of the most important points in the new law are the omission of the mention of the homeopaths by name and the dropping of therapeutics and materia medica from the list of subjects for examination required of candidates for license to practise. The object of these changes was to furnish a strong foundation on which to fight the osteopaths' bill or any similar bill that may be brought in the future. With this law the profession can go before the legislature and say that there is no need of special legislation for licensing the osteopaths; let them come before the state board of medical examiners and pass the examination and then stand on the same footing with everyone else in the state who is treating the sick for a fee. If they do not believe in using drugs it will not tell against them since they are not required to be

examined about drugs. There is but one anatomy, one physiology, one chemistry, one pathology and the rest, whether the applicant expects to practice hydropathy, homœopathy, osteopathy or any other pathy. What need then of a separate board to examine each class of applicants? Let them all come in and be examined on the same footing and then stand on the same footing in the eyes of the law. Those who pass the prescribed examination may practise what they please, whether Christian science, faith cure, divine healing, mesmerism, vitapathy, frigropathy, osteopathy or any of the other fads, whether already hatched or still enclosed in the womb of the future. The new law makes no mention of any school by name. It only aims to protect the public against ignorance by demanding that all who undertake to treat the sick shall have some knowledge of the general principles of medical science about whose truth there is no dispute.

When the new law was discussed in joint session by committees from the State Medical Society and the State Homœopathic Institute, the homœopaths refused absolutely to agree to the two changes just mentioned, that is to the omission of the clause in the present law specifying that three members of the board of examiners shall be homœopaths, and to the omission of therapeutics and materia medica from the list of subjects for examination. As these are considered vital points and no compromise was possible the meeting adjourned without definite action. At a later meeting, however, the differences between the two schools were happily arranged and the licensed practitioners of the state will now present an unbroken front in favor of the new law enabling them to enter upon the contest with good hope of success.

There are other excellent points in the proposed new law which will be obvious to the reader and cannot be commented upon at this time from lack of space. The provision requiring the secretary of the state board to prosecute offenders under the law is particularly gratifying, as it removes what has proved hitherto to be a great stumbling block to the successful action of the present law.

The present law stands as follows:

AN ACT TO REGULATE THE PRACTICE OF MEDICINE IN THE STATE OF MINNESOTA, AND TO LICENSE PHYSICIANS AND SURGEONS AND TO PUNISH PERSONS VIOLATING THE PROVISIONS OF THIS ACT.

Be it enacted by the Legislature of the State of Minnesota;

Section 1. The governor of this state shall appoint a board of examiners, to be known as the State Board of Medical Examiners, consisting of nine (9) members, who shall hold their office for three (3) years after such appointment, and until their successors are appointed.

Provided, That the members thereof first appointed under this act shall be divided into three (3) classes, each class to consist of three (3). The first class shall hold office under said appointment for the period of one (1) year; the second class for two (2) years; and the third class for three (3) years, from the date of their appointment.

It is further provided that no member thereof shall be appointed to serve for more than two (2) terms in succession, and no member of any college or university, having a medical department, shall be appointed to serve as a member of said board, three of which shall be homœopathic physicians.

Sec. 2. Said Board of Medical Examiners shall elect a president, secretary and treasurer; shall have a common seal. The president and secretary shall have power to administer oaths. Said Board of Medical Examiners shall hold meetings for examination at the capitol of this state on the first (1) Tuesday of January, April, June and October of each year, and such other meetings as said board may from time to time appoint. Said board shall keep a record of all the proceedings thereof, and also a record or register of all applicants for a license, together with his or her age, time spent in the study of medicine, and the name and locations of all institutions granting to such applicants degrees or certificates of lectures in medicine or surgery. Said register shall also show whether such applicant was rejected or licensed under this act. Said books and register shall be prima facie evidence of all the matters therein recorded.

Sec. 3. It shall be unlawful for any person to practice medicine in this state without a license from said board, or without having filed with the secretary of said board an affidavit setting forth the times and places in which he or she has practiced medicine within the state prior to the passage of this law. Any person in continuous practice in this state since June first (1), one thousand eight hundred and eighty-seven (1887), not licensed under the provisions of chapter one hundred and twenty-five, General Laws of eighteen hundred and eighty-three (1883), may become a licensed practitioner by submitting to the State Board of Medical Examiners of this State, a diploma from a recognized college of medicine, and by undergoing an individual examination at a regular examination prescribed by the act now in force. The fee for such license shall be ten (\$10) dollars. All persons hereafter commencing the practice of medicine and surgery, in any of its branches in this state, shall apply to said Board for a license so to do, and such applicant, at the time and place designated by said board, or the regular meeting of said board, shall submit to an examination in the following branches, to-wit: Anatomy, Physiology, Chemistry, Histology, Materia Medica, Therapeutics, Preventive Medicine, Practice of Medicine, Surgery, Obstetrics, Diseases of Women and Children, Diseases of the Nervous System, Diseases of the Eye and Ear, Medical Jurisprudence, and such other branches as the board shall deem advisable, and present evidence of having attended three (3) full courses of lectures at a Medical College, recog-

nized by the State Board of Medical Examiners, of at least twenty-six (26) weeks each; no two (2) courses being within the same year.

Provided, That after January first, (1st), eighteen hundred and ninety-nine (1899) it shall be necessary for all persons commencing the practice of medicine and surgery to submit to an examination in above mentioned branches and present evidence of having attended four (4) full courses at a medical college, recognized by the State Board of Medical Examiners, of at least twenty-six (26) weeks each; no two courses being in the same year. All examination papers on subjects requiring treatment peculiar to any school of medicine shall be examined and their sufficiency passed upon by the members of said Board belonging to such school, if such there be, and their recommendation as to the proficiency of such candidate in those particular subjects shall be deemed final by said Board. Said Board shall cause such examination to be both scientific and practical, but of sufficient severity to test the candidates' fitness to practice medicine and surgery. When desired, said examination may be conducted in the presence of the dean of any medical school or the president of any medical society of this state. After examination said board shall grant a license to such applicant to practice medicine and surgery in the State of Minnesota; which said license can only be granted by the consent of not less than seven (7) members of said Board, and which said license shall be signed by the president and secretary of said board, and attested by the seal thereof.

The fee for such examination shall be the sum of ten (\$10) dollars and shall be paid by the applicant to the treasurer of said board, toward defraying the expenses thereof; and such board may refuse or revoke a license for unprofessional, dishonorable or immoral conduct. In all cases of refusal or revocation the applicant may appeal to the appointing power of said Board.

Sec. 4. The person so receiving said license shall file the same, or a certified copy thereof, with the clerk of the district court in and for the county where he or she reside, and said clerk of the court shall file said certificate or copy thereof, and enter a memorandum thereof, giving the date of said license and name of the person to whom the same is issued, and the date of such filing, in a book to be provided and kept for that purpose; and said clerk of the court shall each year furnish to the secretary of said board a list of all certificates on file in his office, and upon notice to him of the change of location or death of a person so licensed, or of the revocation of the license granted to such person, said clerk shall enter at the appropriate places in the record so kept by him, a memorandum of said facts; so that the records so kept by said clerk of the court shall correspond with the records of said board as kept by the secretary thereof. In case a person so licensed shall move into another county of this state, he or she shall procure from the clerk of the court, a certified copy of said license, and file same with the clerk of the district court in the county to which he or she shall so remove. Said clerk shall file and enter the same with like effect as if the same was the original license.

Sec. 5. This act shall not apply to commissioned surgeons of the United States army or navy, to physicians or surgeons in actual consultation from other states or territories, or to actual medical students practicing medicine under the direct supervision of a preceptor.

Sec. 6. Any person practicing medicine or surgery within this state without first having obtained the license herein provided for, or contrary to the provisions of this act shall be deemed guilty of a misdemeanor and upon conviction shall be fined not less than fifty (50) nor more than one hundred (100) dollars, or by imprisonment in the county jail not less than ten (10)

days, nor more than ninety days or both fines and imprisonment. Any person shall be regarded as practicing within the meaning of this act who shall append the letters "M. D." or "M. B." to his or her name, or for a fee prescribe, direct or recommend for the use of any person any drugs or medicine, or other agency for the treatment, care or relief of any wound, fracture or bodily injury or infirmity or disease; provided, however, this act shall not apply to dentists. Justices of the peace and the respective municipal courts shall have jurisdiction over violations of the provisions of this act. It shall be the duty of the respective county attorneys to prosecute violations of this act.

Sec. 7. Chapter one hundred and twenty-five (125) of the General Laws of eighteen hundred eighty-three (1883) is hereby repealed. It is, however, provided that all persons licensed under said act shall be taken and considered as licensed under this act. As the secretary of the board herein provided for shall enter the names of such persons upon the register so kept by him as licensed physicians and surgeons, without application or fee upon the part of the persons so licensed.

Sec. 8. This act shall take effect and be in force from and after July 1st, 1887.

Approved April 22nd. 1895.

#### RULES AND REGULATIONS.

Applicants shall be required to receive a minimum marking of seventy-five per cent. in: Practice of Medicine; 2, Practice of Surgery; 3, Materia medica; 4, Obstetrics; 5, Diseases of Women and Children; and a minimum marking of sixty-five per cent. in each of the following: 1, Anatomy; 2, Chemistry; 3, Physiology; 4, Pathology and Histology; 5, Diseases of the Eye and Ear; 6, Medical Jurisprudence and Preventive Medicine. Must have general average of at least 75 per cent.

II. Each applicant shall register his or her name opposite a number in a book kept by the secretary for that purpose, and shall mark his or her paper with said number, and shall be known to the members of this Board only by said number until his or her papers have been examined and marked; and any paper having any other mark or device shall be thrown out without further examination.

III. Any applicant failing to pass an examination satisfactory to this Board, and being refused a license, may present himself or herself at any subsequent regular meeting of said Board and receive another examination.

IV. All examinations shall be in writing and in the English language.

The revised law is as follows:

A BILL FOR AN ACT TO REGULATE THE PRACTICE OF MEDICINE AND SURGERY AND THE PRACTICE OF THE ART OF HEALING BY ALL SCHOOLS AND ALL SYSTEMS OF TREATMENT, IN THE STATE OF MINNESOTA, AND TO LICENSE PHYSICIANS AND SURGEONS AND ALL PERSONS ENGAGED IN SUCH PRACTICE OF THE ART OF HEALING, AND TO PUNISH PERSONS VIOLATING THE PROVISIONS OF THIS ACT.

Be it enacted by the Legislature of the State of Minnesota:

Section 1. The governor of this state shall appoint a board of examiners to be known as the State Board of Medical Examiners, consisting of twelve (12) members who shall be apportioned among the different schools of medicine and systems of healing as nearly

as may be in the proportion of one member to each one hundred, or fraction thereof, practitioners of each school or system of healing not to exceed seven (7) members from any one school or system, and who shall hold office for the term of three years and until their successors shall be appointed and qualified. Provided, however, the members of the present Board of Medical Examiners appointed under Chapter 9 of the Laws of 1887 and amendments thereto shall continue in office as members of the Board herein created, until the expiration of their respective terms of office, and the remaining three members of such first board created hereunder shall be appointed for one, two and three years respectively, to the end that four members of this board shall go out of office annually, and provided further, that no member shall be appointed for more than two terms in succession, and such members shall be legally qualified and licensed practitioners in good standing in their profession, and no member of the faculty of any college, university or school having a medical department or teaching any system of healing shall be appointed to serve as a member of said board.

Sec. 2. Said board of medical examiners shall elect from its members a president, secretary and treasurer, and shall have a common seal. The president and secretary shall have power to administer oaths. Said board of medical examiners shall hold meetings for examination of candidates for license to practice, at the capitol of this state on the second Tuesday of January, April, July and October of each year, and such other meetings as said board may from time to time appoint. Said board shall keep a record of all the proceedings and also a record or register of every applicant for a license, together with his or her age, the time spent in the study of medicine, or surgery, or any system of healing, and the name and location of all institutions granting to such applicant degrees or certificates of lectures in medicine or surgery or system of healing. Said register shall also show whether said applicant was rejected or licensed under this act, and shall also disclose the fact of the revocation of any such license. Said books and register shall be prima facie evidence of all the matters therein recorded.

Sec. 3. The compensation and expenses of members and officers of said board of medical examiners, and all expenses proper and necessary in the opinion of the board to discharge its duties under, and to enforce the law, shall be paid out of any moneys in the treasury of said board, and the said board shall look alone to the revenue derived from the operation of this act for its compensation and expenses, and if said revenue is not sufficient to pay all necessary expenses and to pay the compensation of each member of said board in full, then the amount thus received shall be prorated among the members.

Sec. 4. Nothing in this act shall affect those who were practicing medicine and surgery or any system of healing in the state of Minnesota prior to July 1st, 1887, or are now lawfully licensed to practice medicine or surgery in this state, but the secretary of the state board, herein provided for, shall without charge transcribe the names of all such licensed practitioners into the register hereinbefore referred to, from the register heretofore kept by the secretary of the State Board of Medical Examiners, created by chapter 9 of the Laws of 1887, and amendments thereto. All persons, except those practicing in the state prior to July 1st, 1887, not heretofore licensed to practice medicine or surgery in this state, whether they have heretofore assumed to practice medicine or surgery or any system of healing or not, and all persons desiring hereafter to commence the practice of medicine or surgery or any system of healing in any of their branches in this state, shall before so practicing apply to said board for license to do so, and such applicants, at the time and

place designated by said board, or at any regular meeting of said board, shall present evidence of time spent in the study of medicine and surgery or of such system of healing, as follows: Prior to January 1st, 1900, such applicants shall present evidence to prove that they have attended at least eighteen (18) months' lectures at a college of medicine and surgery or system of healing; on and after January 1st, 1900, such applicants for a license shall present evidence to prove that they have attended four (4) full courses of lectures at a college of medicine and surgery or of any system of healing, of at least twenty-six weeks each, no two courses being within the same twelve (12) months. Provided, that any applicant who shall present evidence to prove that prior to July 1st, 1898, he attended three full courses of lectures, of at least twenty-six weeks each; or any applicant who shall present evidence to prove that prior to July 1st, 1887, he graduated from a college of medicine and surgery or other system of healing, and attended two (2) full courses of lectures of at least twenty (20) weeks each, and who has since said dates continually practiced his profession, shall be deemed to possess in such attendance and practice the equivalents of the said four courses of study above provided for.

All of said applicants shall submit to an examination by said board in the following branches, to-wit: Anatomy, physiology, chemistry, histology, pathology, obstetrics and diagnosis. Said board shall cause such examination to be both scientific and practical, but of sufficient severity to test the candidates' fitness to practice. After examination, if such candidate shall show himself qualified, said board shall grant a license to said applicant to practice in the State of Minnesota, which said license can only be granted by the consent of not less than three-fourths of the members of said board, and shall be signed by the president and secretary of said board, and attested by the seal thereof. The fee for such examination shall be the sum of twenty (20) dollars, and shall be paid by the applicant to the treasurer of said board before said examination. Such fee shall not be returned in the event of a failure, but the applicant may, within a year after such failure, present himself and be again examined without the payment of any additional fee. Such board may refuse to grant a license to any person guilty of unprofessional or dishonorable conduct, or any person guilty of a felony, or any person addicted to the liquor or drug habit to such a degree as to render him unfit to practice and may, after notice and hearing at which the party shall be entitled to appear personally or by attorney and offer evidence, revoke a license theretofore granted, either by said board or by the board appointed under the provisions of Chapter 9, of the general laws of 1897, and amendment thereto. The words "unprofessional or dishonorable conduct" as used in this section are hereby declared to mean—

First—The procuring, or aiding, or abetting in procuring a criminal abortion.

Second—The employing of what are popularly known as "cappers" or "steerers" in procuring practice.

Third—The obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured.

Fourth—Conviction of any offence involving moral turpitude.

Fifth—Willful betrayal of professional secrets to the detriment of a patient.

Sec. 5. The person so receiving said license shall file the same, or a certified copy thereof, with the clerk of the district court in and for the county where such licensee resides, and said clerk of court shall file said certificate or copy thereof, and enter a memoranda thereof giving the date of said license, the name of the person to whom the same is issued and the date of such filing, in a book to be provided and kept for that pur-



pose, and said clerk of the court shall each year furnish to the secretary of said board of medical examiners a list of all certificates on file in his office, and upon notice to him of the change of location or death of a person so licensed, or of the revocation of the license granted to such person, said clerk shall enter, at the appropriate places in the record so kept by him, a memorandum of said fact, so that the records so kept by said clerk of the court shall correspond with the records of said board as kept by the secretary thereof. In case a person so licensed shall move into another county of the state, he or she shall procure from the clerk of the court a certified copy of said license, and file the same with the clerk of the district court in the county to which such licensee shall so move. Said clerk shall file and enter the same with like effect as if the same were the original license. The clerk of the district court shall be entitled to exact a fee of one (\$1.00) dollar from each licensee for his services in filing the certificates herein provided for and entering the same in said books, and said fee shall also be held to include the compensation for said clerk for furnishing to the secretary of said board the list of certificates herein provided for, and for performing the other duties incumbent upon him under this act.

Sec. 6. Any person except those practicing in the state prior to July 1st, 1887, failing to comply with the requirements of this act shall not be permitted to collect any fees or charges for services rendered as such practitioner of medicine, surgery or any system of healing, in any of the courts of this state, nor be allowed to testify as a medical or surgical expert in any court of this state, nor be allowed to testify as a medical expert in any court of this state, nor execute any certificates as a physician or surgeon, nor shall such person hold any medical office, or be recognized or employed by the state, county or any municipal corporation as a physician or surgeon, nor shall such be entitled to enjoy any of the privileges, rights or exemptions granted to physicians or surgeons by the laws of this state.

Sec. 7. Any person shall be regarded as practicing medicine within the meaning of this act who shall hold himself out to the public as a physician or doctor of medicine, or advertise as such, or who shall profess to heal, or shall operate on or prescribe for, or otherwise treat any physical or mental ailment of another for compensation, gain or reward received or expected. But nothing in this act shall be construed to prohibit gratuitous services in case of an emergency, nor the administration of ordinary household remedies, and this act shall not apply to commissioned surgeons in the United States army and navy, nor to any physician or surgeon from another state or territory who is a legal practitioner of medicine or surgery in the state or territory in which he resides, when in actual consultation with a legal practitioner of this state, nor to nurses in their legitimate occupations, nor to any legally qualified dentist when engaged exclusively in the practice of dentistry.

Sec. 8. Any person except those practicing in this state prior to July 1st, 1887, who shall practice in this state, as defined in section 7 of this act, without first having obtained the license herein provided for, shall be deemed guilty of a misdemeanor, and upon conviction shall be fined the sum of one hundred (\$100) dollars or be imprisoned in the county jail for thirty (30) days, and each day such person shall so practice within this state, as so defined, shall constitute a separate offence.

Sec. 9. All fines collected under the provisions of this act shall be paid one-half to the poor fund of the county in which such prosecution is had and one-half to the state board of medical examiners. The secretary of the state board of medical examiners is charged with the duty of enforcing this act; if he shall have knowl-

edge that the said act has been, or is being, violated, he shall investigate the matter, and, upon probable cause appearing, he shall file a complaint and prosecute the offender. It shall be the duty of the respective county attorneys of this state, when requested by said secretary, to take charge of and conduct such prosecutions.

Sec. 10. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

Sec. 11. This act shall take effect and be in force from and after its passage.

The osteopaths' law is as follows:

A BILL FOR AN ACT TO REGULATE THE PRACTICE OF OSTEOPATHY IN THE STATE OF MINNESOTA, AND TO LICENSE OSTEOPATHS TO PRACTICE IN THIS STATE, AND TO PUNISH PERSONS VIOLATING THE PROVISIONS OF THIS ACT.

Be it enacted by the Legislature of the State of Minnesota:

Section 1. That any person practicing Osteopathy in any of its branches in this state shall possess the qualifications required by this act.

Sec. 2. The governor of this state shall appoint a board of commissioners, as soon as possible after the passage of this act, to be known as the State Board of Osteopathic Examiners. This board shall consist of three (3) qualified, practicing, resident Osteopaths, each of whom shall be a graduate of a legally authorized school of osteopathy. Each member of said board shall serve thereon for a term of two years, and until his successor is appointed, except in case of the first board, on which two (2) members shall serve for two (2) years and one (1) for three (3) years, as specified in their appointment. In case of a vacancy by death or otherwise, there shall be appointed in a like manner a person to serve through such unexpired term.

Sec. 3. Said Board of Osteopathic Examiners shall elect a president, secretary and treasurer, and shall have a common seal, and its president and secretary shall have power to administer oaths. Said board shall hold meetings for examination at the state capitol, or at some regularly conducted and legally authorized school of osteopathy within this state, on the third Tuesday of February, June and October of each year, and such other meetings as may be deemed necessary, each session thereof not to exceed three days, and shall issue a certificate of qualification to all applicants having a diploma, or who pass the required examination as provided by section four (4) of this act; said certificate shall be signed by the president and secretary of said board, and attested by its seal, and shall be conclusive as to the rights of the lawful holder of the same to practice osteopathy in this state. Said board shall keep a record of all its proceedings and also a register of all applicants for a license, together with his or her name and age and time spent in the study and practice of osteopathy, and of the name and location of the school or institute of osteopathy from which said applicant holds a diploma, and shall keep a register which shall show the names of all applicants licensed, or that are rejected under this act. Said books and records shall be prima facie evidence of all matters therein recorded.

Sec. 4. It shall be unlawful for any person to practice osteopathy in this state without a license from said board. All persons practicing osteopathy within this state prior to the passage of this act and holding a diploma from a legally authorized school of osteopathy, of good repute as such, may be licensed to practice osteopathy in this state, by submitting to said Board of Osteopathic Examiners such a diploma and satisfying such board that they are the legal holders thereof, or

by undergoing an individual examination, as herein-after provided, at a regular meeting of said board for examinations. The fee for such license shall be ten (10) dollars.

All persons after January 1st, 1900, commencing the practice of osteopathy in this state in any of its branches, shall apply to said board for a license to do so, and such applicant at the time and place designated by said board, or at the regular meeting of said board, shall submit to an examination in the following branches, to-wit: Anatomy, physiology, chemistry, histology, pathology, gynæcology, obstetrics and theory and practice of osteopathy and such other branches as the board shall deem advisable, and present evidence of having actually attended for at least twenty (20) months, or four terms of five (5) months each, a legally authorized and regularly conducted school of osteopathy, recognized by said board of examiners. All the examination papers on subjects peculiar to osteopathy shall be examined, and their sufficiency passed upon by the members of said board, whose decision shall be final thereon, and said board shall cause said examination to be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice osteopathy. After examination said board shall grant a license to such applicant as shall pass the examination to practice osteopathy in the State of Minnesota, which license shall be granted by the consent of not less than two members of said board and attested by the seal thereof. For the support and maintenance of said board the fee for such examination and license shall be ten (10) dollars, which shall be paid in advance to the treasurer of said board and shall be applied by said board to defray all the expenses thereof.

Provided, that the requirements of a term of twenty (20) months, or four (4) terms of five (5) months each, shall not apply to those who have been in actual practice for two years and graduated prior to the passage of this act.

Sec. 5. The certificate provided for in section four (4) of this act shall not authorize the holder thereof to prescribe or use drugs in the practice of osteopathy, nor to perform major or operative surgery.

Sec. 6. The person so receiving such license shall have it recorded in the office of the clerk of the district court, in the county in which he or she resides, and the record shall be endorsed thereon. In case a person so licensed shall remove to another county to practice, the holder shall record license in like manner in the county to which he or she removes, and the holder of the license shall pay to the clerk of the court a fee of one (1) dollar for making the record.

Sec. 7. Any person practicing osteopathy within this state without first having obtained the license herein provided for, or contrary to the provisions of this act, or who for the purpose of obtaining such license shall falsely represent himself or herself to be the holder of a diploma as herein provided, shall be deemed guilty of a misdemeanor, and upon conviction therefor shall be punished by a fine of not less than fifty (50) dollars, nor more than one hundred (100) dollars, or by imprisonment in the county jail for a period of not more than ninety days, for each and every such offense. It shall be the duty of the respective county attorneys to prosecute violation of this act.

Sec. 8. Any such certificate may be revoked by said board, upon satisfactory proof of fraud or misrepresentation in procuring the same, or for any violations of the provisions of the certificate, or any gross immorality by the holder thereof.

Sec. 9. The system, method and science of treating diseases of the human body commonly known as Osteopathy is hereby declared not to be the practice of medicine or surgery within the meaning of Chapter 128 of Title one, Gen. Stat., 1894, and amendments thereof. The provisions of section four hundred and thirty-eight

(438), General Statutes one thousand eight hundred and ninety-four (1894), shall apply to and govern osteopaths practicing under this title.

Sec. 10. Any corporation organized under the laws of the state of Minnesota for the purpose of establishing and maintaining an institute or college for the promotion of the science of osteopathy, and recognized by said board of examiners, shall have the authority to confer on the graduate of such institute or college the degree of Doctor of Osteopathy, or Diplomat in Osteopathy.

Sec. 11. This act shall take effect and be in force from and after its passage.

## CORRESPONDENCE.

### "TRAUMATIC PROLAPSE OF THE RECTUM."

Editor of Northwestern Lancet:

Sir:—Referring to Dr. Eitel's article in the issue of Dec. 15, '98, I would say that I question the possibility of a traumatism causing prolapse of the rectum. An injury sufficiently severe to cause the rectum to protrude from the anus must of necessity destroy the abdominal contents. The report of the following case will, I believe, tend to support my opinion:



The accompanying cut is from a photograph taken June 20, 1896, of the case of "A. M., age 33, single, of fine physique, family history excellent; occupation, railroad bridge carpenter" who came to my hospital June 20, 1896, to have something done for a congenital rectal prolapse; at least he said he had suffered from it as long as he could remember. I tried linear cauterization with the result that the rectum staid up all right for about two weeks, then came down as bad as ever. I told the young man that the only thing left to do was to cut off the protruding mass, and he said he was going to work until he had the price of the operation and would then come back and have it done. He came in to see me March 7, 1898, and said: "Doctor, I have beat-

en you out of a job this time. I got pinched up on the S. railroad, made them believe that it caused the trouble with my rectum, and the railroad company paid for the operation."

Dr. Eitel certainly did a fine operation in this case, but it was not one of traumatic rectal prolapse.

W. H. Lincoln.

Wabasha, Minn., January, 1899.

## NEW INSTRUMENTS.

### A NEW RECTAL SPECULUM.\*

By A. M. ABBOTT, M. D.,

Minneapolis.

This speculum affords a comprehensive view of the rectum and sigmoid part of the colon, comparable to that obtained by Sim's speculum in the vagina and it acts upon the same principle, i. e., by the pressure of the atmosphere. It is made in three sizes. The two smaller sizes may be used in children, and are also useful in case of stricture of the bowels, for they can be passed through the stricture when not too small (as is rarely the case), so that the depth of the constriction can be made out.



The speculum should be used with the patient in the Sims' position, with the hips elevated four or six inches; or, if desired, it may be used with the patient in the knee-chest position. The best light is that from an electric head lamp, or a strong light reflected by a head mirror.

\*Read before the Minnesota Academy of Medicine, January 4, 1899.

A short Sim's speculum of any required width is introduced on the coccygeal side of the rectum to open the sphincter ani, while one of the long speculums is placed on the pubic side. Instead of this arrangement two of the long specula may be correspondingly introduced. By the use of this instrument the bowel can not only be fully inspected, but room is obtained for the use of instruments in removing growths, treating intelligently ulcerations high in the bowel, dilating strictures, or for any other required operations. Anæsthesia, with preliminary dilatation of the sphincter ani, will of course increase the efficiency of the instrument.

The Crolius, Tucker & Allen Co., instrument dealers of Minneapolis, Minn., are manufacturing these speculums under my instructions.

## BOOK NOTICES.

Practical Urinalysis and Urinary Diagnosis. By Charles W. Purdy, M. D., L.L.D., Fellow of the Royal College of Physicians and Surgeons, Kingston's Etc., Fourth Revised Edition. Illustrated. Phila., New York, Chicago: The F. A. Davis Company, 1898. [Price, \$2.50.]

Several of the previous editions of this work have received notice in these columns and this last reproduction needs only a repetition of the favorable mention made in the past.

The portion devoted to the practical analysis of urine is very full and complete, the tests recommended being chosen with care and with excellent reasons given for their particular selection. The sediments are well illustrated and there is an excellent reproduction of Vogel's scale of urine tints. The second part, devoted to a consideration of the diagnosis of disease through examination of the urine, is full of practical suggestions which the reader will seek in vain elsewhere.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M. D., Professor of Obstetrics in the University of Pennsylvania. Illustrated. W. B. Saunders, 1898. [Price, \$5.00.]

Dr. Hirst is one of the obstetricians who is at the same time a gynæcologist, a combination common enough in Germany but somewhat unusual in this country. This places him in a position to speak with authority upon topics which lie upon the border line between the two branches of medical science, and also to estimate from his own experience how far the accidents and diseases of midwifery are the causes of conditions calling for subsequent treatment in gynæcology and vice versa.

Written as a text-book designed for the use of students as well as of practitioners, this work

goes into many topics that at first sight appear too elementary to deserve mention, but this is a good fault, for the student or young practitioner well knows that the little, common points of a medical subject are the very ones it is hardest to find out about in medical meetings.

A Primer of Psychology and Mental Disease. By C. Burr, M. D., Medical Director of Oak Grove Hospital for Nervous and Mental Diseases, Flint, Mich.; etc. Second Edition. Revised. Phila.; New York; Chicago: The F. A. Davis Co., 1898. [Price, \$1.00, net.]

This little work contains an abundance of most valuable and practical information about the care of insane and nervous patients, beginning with a short treatise upon psychology and insanity. The closing chapter is made of unusual value by telling what to avoid as well as what to do in the care of the insane, and so taking up topics not ordinarily touched upon.

## NOTES.

### SAFETY AND FAST TIME.

The recent trials of speed on two railroads, the Northwestern and the Burlington, between Chicago and Omaha, show us what we may expect our Western railroads to do in this line at no distant day; and the fact that the time between the Northwest and Chicago is soon to be materially reduced, as has already been done by the mail trains, gives one food for thought, indeed for serious thought.

Fast time is demanded by the public, and the public must pay for it in human lives, for this is the law of accelerated motion on railroads. The road with perfect equipment of rolling-stock and roadbed may kill few or no passengers, but the other roads will furnish victims enough to demonstrate the truth of the law. This is the sad story of statistics.

The name of Vanderbilt is worthy of all honor in this country, because the Vanderbilt roads have ever paid the smallest possible penalty for fast speed. Witness, for instance, the Lake Shore and New York Central Line, where the highest speed in the world for a long distance is daily maintained, and yet an injury to a passenger on this line is exceedingly rare. The Northwestern Line is a Vanderbilt road, but even before it became so, it had a reputation for superb equipment in every respect, with a degree of safety to its passengers attained by no other Western line.

This road's Chicago trains are models in every respect, and its entire equipment is such a guarantee of safety to the traveling public that no fear need be felt by the most timid that the limit of safety will ever be passed by this road's management whatever be the speed.

## PROTONUCLEIN IN GENERAL PRACTICE.\*

By G. W. SHERMAN, M. D.,

Detroit, Michigan.

My first practical experience with protonuclein was on myself. About two and a half years ago I was taken with a severe attack of acute catarrhal inflammation of the nasal mucous membrane which rapidly extended down the trachea into the bronchi. It began on a Friday morning with an almost incessant sneezing accompanied by blocking of the nose, fullness in the head and headache, followed later in the day by a thin, copious discharge from the nose, and an irritating cough. By 5 o'clock p. m. the same day my headache was severe, my limbs all ached, and on taking my temperature it registered 101°. I had had similar attacks before, none apparently quite so severe, which always ran a course of from one to three weeks. I had tried quinine and other remedies without any appreciable benefit, and was a willing subject to try something new. I had a few samples of protonuclein and began to take them ad libitum, starting about 5 o'clock in the evening. By Saturday morning I felt some better and continued taking the preparation through all that day, still ad libitum, and by evening, twenty-four hours after I began its use, felt considerably improved. I continued taking more during Sunday, when my nose cleared up, and the headache, has taught me that the proper dose in such fever, cough, and soreness in my limbs disappeared. By Monday evening, after three days' treatment, I was practically well and attended a meeting of the Detroit Medical and Library Association. Since then I have always prescribed protonuclein in these acute catarrhal affections with the same happy result. Experience has taught me that the proper dose in such cases, in the adult, is from six to twelve grains repeated every two to three hours. The treatment should be continued with smaller doses for a few days after the disease has disappeared to prevent a relapse.

I have found protonuclein especially useful in the treatment of broncho-pneumonia in infants and children. In these cases I usually give from two to four grains, according to age, repeated every two to three hours, and find that a recovery takes place in from three to five days. I have had remarkable success in treating pneumonia with this preparation and will briefly report two cases.

Case I.—My mother, aged seventy-two years, on April 8, 1897, suffered a severe chill about 9 o'clock in the evening. Two hours later when

\*Read before the Detroit Medical and Library Association, and published in the Physician and Surgeon.

I first saw her she complained of pain in the right side; was coughing up bloody mucus, and was very uneasy. Her heart had been irregular for some years but now the pulse was 130 and her temperature  $103^{\circ}$ . Physical examination revealed pneumonia of the right lung. I prescribed two grains of phenacetin and six grains of protonuclein to be repeated every two hours. By 10 o'clock the next day her temperature was  $99.3-5^{\circ}$ , and her pulse 108; the pain in her side was less and she felt much better. The phenacetin was discontinued and the protonuclein continued. By the third day her temperature was normal and she felt so well that in spite of my protests, she was determined to sit up. She coughed up rust-colored sputum for six or seven days but otherwise felt quite well. She has had no trouble with her lungs since.

Case III.—C. G., a male aged sixty-three years, had not felt well for several days, and was taken with a fever the day before I saw him. Patient complained of pain in his right side, and difficulty in breathing. His temperature was  $102.3-5^{\circ}$ , pulse 110, and the lower portion of his left lung was inflamed. I prescribed six grains of protonuclein and ordered that the dose be repeated every two hours. The next day there was a hepatization of the lower half of the right lung, with a temperature of  $102^{\circ}$ , and a pulse of 108. The protonuclein was now increased to nine grains, repeated every two hours. The third day the temperature was  $101^{\circ}$  and the pulse 100. He felt better and on examination the lung was found to be clearing up. The protonuclein was continued. On the fourth day the temperature was  $98^{\circ}$ , the pulse 84, patient had enjoyed a night's rest, appetite returning, and lung much improved. The fifth day I found my patient dressed and sitting in a chair. He said he felt well, but I persuaded him to go back to bed fearing something might happen. I continued the protonuclein four times a day for a few days, when he made a complete recovery.

I have treated ten cases of typhoid fever with protonuclein, all of which made an unusually early recovery considering the severity of the early symptoms of some cases. I will briefly report a few cases:

I was called to a family in which one of the city physicians had charge of two typhoid fever cases; one, aged twenty years, who had been sick three weeks, and another, aged six years, who was just convalescing, after seven weeks illness. B the time I made my second call a few days later, two other children of the family were taken sick. A boy seven years of age had not been feeling well for a few days, had no appetite, felt tired, tongue dry and coated, temperature  $101^{\circ}$ . I gave him four grains of protonuclein every three hours. He began to feel better in a few days, and by the eighth day had

entirely recovered. I will leave the members to decide whether this was typhoid fever or not. The other case was a girl aged ten years. She had the usual symptoms of typhoid fever, with a temperature of  $102\frac{1}{2}^{\circ}$ . Protonuclein, six grains, and phenacetin, two grains, repeated every three hours, were prescribed. The temperature continued to rise until the fifth day when it reached  $104.1-5^{\circ}$ , pulse 130. The phenacetin was discontinued and the cold pack substituted (which was poorly dispensed) and protonuclein increased to nine grains, repeated every two hours. The temperature from the fifth to the tenth day ranged between  $102\frac{1}{2}^{\circ}$  and  $104\frac{1}{2}^{\circ}$ , and considerable diarrhea set in which was controlled with bismuth and turpentine emulsion. From the tenth day the temperature gradually declined until the fifteenth day, when it became normal and remained so thereafter. It will be noticed that larger doses of protonuclein were used in this case than in the first case and a more decisive recovery ensued.

I have recently treated two other patients, one aged six years and the other twelve years, both girls, with large doses of protonuclein, in whom the fever ran a course almost identical with the above case. The one unusual feature in these three cases was the early appearance of the appetite. About the twelfth or thirteenth day they began to ask for food, and in a few days the desire to take nourishment became so keen that it was difficult to refuse them something more substantial than milk. All these cases lost their hair during convalescence.

Protonuclein has a wonderful effect in maintaining the spirits and vitality of a patient during fever and has no depressing effect, while it reduces the temperature. This is particularly noticeable in typhoid cases. They do not lapse into that stupid condition which is so characteristic of this disease.

When protonuclein is taken in large doses, say ten to fifteen grains repeated every two or three hours, it produces a deafness and ringing in the ears very similar to that produced by large doses of quinine. In such doses it may also cause an unsteadiness of the nerves and an increased frequency of the heart's action. If this condition is observed during the treatment of a disease it is well to withhold a few doses, when these symptoms will readily disappear without leaving any bad effects.

I have given protonuclein in scarlet fever with the effect of having the temperature decline and the swelling of the glands of the neck disappear, while the rash is coming out. I have given it with great success in puerperal fever, erysipelas, infected wounds, and in fact, consider it a valuable remedy in all infectious diseases.

Protonuclein also has quite marked tonic effects which are particularly noticeable when

given in cases of general debility resulting from advanced age. As a tonic it should be given in from six to nine grain doses after meals and at bedtime. In neurasthenic cases it is of benefit, restoring a normal tone to the nervous system. I have given it in a few cases of whooping-cough with benefit. I have given it to a few tubercular cases but cannot say that it was followed by especial improvement. In cases where in the temperature is high I usually prescribe small doses of phenacetin as a palliative remedy to assist in bringing down the temperature until the protonuclein has time to produce results. I consider protonuclein a very valuable addition to our remedies in combating disease, and feel that all who use it in large doses will be gratified with its results.

#### TO STOP SUBSTITUTION.

The Dios Chemical Co., St. Louis, Mo., are determined to stop the nefarious business of substituting their two products, Divoburnia and Neurosine. Physicians recognize the therapeutic value of these products in the class of cases in which they are indicated and whereas this company caters exclusively to the profession, we believe it is due them that physicians co-operate in stopping substitution, and if they will report to the Dios company such druggists as attempt substituting their products it will be considered strictly confidential, and their name will in no wise be mentioned.

We trust the patrons of The Lancet will co-operate, not only in protecting the manufacturer, but themselves as well.

#### WELL KNOWN—WELL LIKED.

The other day, the superintendent of one of the largest city hospitals in this country, said to a representative of The Imperial Granum Company, the manufacturers of that reliable dietetic preparation, Imperial Granum: "It is not necessary for your firm to send any one here to tell me about their product for I have used it both in private and hospital practice for over twenty-five years, and can hardly believe that even the youngest members of the medical profession do not know the merits of this well known and well liked food for invalids and convalescents."

#### FEEDING CONSUMPTIVES.

A physician of the first rank in Boston said recently, "The main difficulty in feeding consumptives is not to find food for them, but to quiet the nerves racked by pain and coughing—to quiet but not to depress them. This once accomplished, the forces influencing nutrition revive immediately and only then will nourishment

of any kind find its way to the depleted tissues. Angier's Petroleum Emulsion is one of the exceptional few agents upon which I depend for this functional restoring process, and the only one in my experience that never caused any unpleasant sensation after swallowing."

#### ANTISEPTICS.

The antiseptic preparations now seeking eminence and favoritism at the hands of the profession are many. The preparation that has given me most uniform, excellent and lasting results is Glyco-Thymoline (Kress). It is a most excellent mixture, of a beautiful wine color, alkaline in reaction, slightly pungent and very pleasant to take. Its therapeutic virtues are best shown in nasal and pharyngeal troubles, though I am now using it with marked benefit in a case of chronic cystitis of ten months' standing. I had used the various remedies recommended, such as boric acid, sulphate of zinc, etc., with scarcely any improvement; but since I have been using Glyco-Thymoline I see marked improvement in every way, particularly in less frequent urination, and with more ease, with also considerable improvement in general health.—*Charlotte Medical Journal for March, 1897.*

#### THE RATIONAL TREATMENT OF GRIPPE.

The necessity of a powerful eliminant in every prescription for grippe is self-evident. While antipyretics and antiperiodics may somewhat stimulate the excretions and relieve congestion, thereby controlling certain features of the disease, a complete cure cannot be expected until the grippe poison is thoroughly eliminated and the diseased organs enabled to resume normal functions.

The successful treatment of grippe depends upon the thoroughness of the remedy employed, hence we ask why temporize with antipyretics and antiperiodics when Tongaline always secures prompt and efficient as well as permanent results.

The internal use of Tongaline Liquid taken at short intervals in hot water, washed down with copious draughts of hot water, may be supplemented by its local application to the inner parts of the thighs and to the abdominal surfaces. Or as grippe invariably renders the stomach irritable and the nerves sensitive, the disturbing effects of internal medication can be entirely avoided by the external use of Tongaline Liquid alone.

In fact when the system is thoroughly under the influence of Tongaline, the progress of the grippe is arrested and as a result there is immediate recuperation, followed shortly by a perfect cure.

## LECTURES AND ADDRESSES.

HARE-LIP—FRACTURE OF THE SURGICAL NECK OF  
THE SCAPULA.\*

BY JAMES E. MOORE, M. D.,

Professor of Clinical Surgery in the University of Minnesota.

Gentlemen—Our first patient today is this eleven weeks old baby, who was born with a hare lip and cleft palate and upon whom I operated eight days ago for the hare lip. The cleft palate was left until the child grows older and stronger, because it is an extensive cleft extending through the roof of the mouth, and in this young child the operation would be a dangerous one and one not very likely to succeed. When the child is from two to four years old the operation will be comparatively free from danger and the chances of success will be greater than they would be now, because there will be more material from which to make flaps, and after closing the cleft in the lip the cleft palate will grow smaller. Theoretically this child should be operated upon before it begins to talk, so that it will be able to speak more distinctly than it can if the operation is performed later, but practically I do not believe this is true, because my most satisfactory results have been obtained for older patients, and I have one patient upon whom I operated when twelve years old who speaks perfectly.

We cannot promise the parents that these children will be able to enunciate distinctly, because in the most favorable cases there is a shortage of material in the palate which allows the air to escape through the nose, giving the voice that characteristic nasal twang.

Dr. Cutts will now give the little one chloroform and I will remove the stitches. When I first began to operate upon these cases I found it much more difficult to secure union than I do now. I have not had a failure for several years past. You naturally infer that this difference is due to the fact that the operation is performed aseptically now, and that it was not done so in former years, but I do not believe that this is the reason, because asepsis cuts a comparatively small figure in operation about the mouth.

The secret of our success is that we have learned to perform the operation so that there is comparatively little strain upon the stitches. The first thing to do in a hare lip operation is to dissect the short lip loose from the jaw so

that it can be slid toward the median line. In this case I dissected the left side of the lip and the left cheek from the bone almost up to the eye. The hemorrhage is quite free at first, but is readily controlled by pressure from an assistant's fingers and ceases entirely when the stitches are tied. The first stitch should extend well out into the cheek so as to bring the nose into shape. Silk worm gut is an ideal suture material for this operation.

I have now removed the stitches and union is perfect. You can see that the center of the lip projects downward slightly over the lower lip, but it does not project nearly so much as it did eight days ago when the operation was performed and in a month from now it will have entirely disappeared. It is necessary to make it project in this manner because the scar contracts and without this protection would leave a notch in the lip. These cases do best without dressings of any kind. Nature soon forms a scab over the wound which protects it. In your older works on surgery you see cuts of instruments and devices to hold the cheeks together so as to prevent the stitches from cutting out, but they are no longer used because we have learned how to keep the strain off of the stitches. Adhesive straps do more harm than good. This babe has nursed its bottle without complaint ever since the operation.

Our next patient is a man forty-two years old, who fell heavily upon his shoulder eight days ago, causing a severe injury. He was given an anæsthetic and examined upon the evening of the accident, and was told that he had a dislocation of the shoulder and a fracture of the surgical neck of the humerus and that an operation was indicated to reduce the dislocation.

Yesterday I saw the man for the first time. He had already made up his mind to go to the hospital, and if necessary to submit to an operation. I have made no examination because the shoulder is swollen and sore and because I expected to have him anæsthetized today. I am prepared to perform McBurney's operation for reducing the dislocation if necessary.

When a fracture and dislocation of the humerus both occur at the same time the problem is: How shall we reduce the dislocation? It can not be done in the usual manner because the fracture places the upper fragment beyond our control. In olden times the dislocation was left until the fracture had united, when an effort was made to reduce the dislocation, which you can readily understand would be difficult after so long a time. The results following this treatment for obvious reasons were very unsatisfactory. After antiseptic surgery was introduced

\*A Clinical Lecture Delivered at St. Barnabas Hospital, Minneapolis, Jan. 21, 1899.

a number of cases were treated by open arthrotomy, but the results were not very flattering. In 1894 McBurney treated a case with perfect success by cutting down upon the upper fragment, drilling a hole in it into which he introduced a steel hook with a stout handle; then by traction in the proper direction by means of this hook he succeeded in reducing the dislocation, after which he closed the wound and treated the case as a simple fracture. I am prepared to perform this operation in this case should the diagnosis originally made prove correct, but I seriously question the diagnosis, although I have not examined the case, because the combination of fracture and dislocation at this point is a very rare accident. Only about 180 cases have been reported in the whole history of surgery.

Our patient is now well under the anæsthetic and we will proceed to examine him. You can see that he has had a heavy fall from the extensive discoloration about the shoulder. The patient is very large and fleshy, which makes the diagnosis all the more difficult. When you are called to a case of suspected fracture, don't begin violent manipulations to detect crepitus, because they are unnecessary, unskillful and harmful. First notice the position of the arm. It rests close to the patient's side. He might have a fracture of the neck of the humerus, but he could not have a dislocation into the axilla and have the arm in this position unless he had at the same time a fracture, because with the head of the bone in the axilla the deltoid muscle holds the elbow away from the body. I now bring the arm across in front of his chest and place the palm of his hand upon the opposite shoulder and find that I can bring his elbow close to his body. This is known as Duga's test and excludes a simple dislocation, because with a dislocation the elbow would stand out from the chest. As I brought the arm gently over into this position I felt crepitus so that I know a fracture exists. Please remember that crepitus is something to be felt and not heard. Doubtless I could grind this helpless man's fragments together so that you could hear crepitus, but that would be very poor surgery.

Upon introducing my fingers into the axilla I do not find it encroached upon by the head of the bone. It is not very difficult to feel the head of the bone in its proper position, so we can be sure that this man has not a dislocation. I now grasp the head of the bone with my left hand and the elbow with my right hand, and as I gently rotate the humerus I find that the head of the bone rotates with the shaft; this excludes fracture of the shaft. We next make gentle pressure upon the acromion and coracoid processes and find that they are not broken. It is easy to exclude fracture of the clavicle by palpation. I now grasp the shoulder in my right hand and

the clavicle and scapula in my left hand, and by manipulation elicit crepitus. You see that the whole shoulder can be moved in an unusual manner. In short, we have unnatural movement and crepitus just inside of the coracoid process or in the surgical neck of the scapula, so that we are safe in saying that this man has a fracture of the surgical neck of the scapula. In this fat man we can detect no change of shape, but in a spare person it would be quite noticeable, and with the patient in a sitting posture there would be drooping of the shoulder with apparent lengthening of the arm.

When called upon to treat a fracture you should always consider the indications and how to meet them. In this case the inner fragment is not displaced, but the outer one is displaced downward and inward by the weight of the arm and by the pectoral and latissimus dorsi muscles. The indications are therefore to lift the shoulder upward and outward. I now place a soft pad, made of folded gauze in the axilla to act as a fulcrum, and by bringing the elbow to the side, the humerus is made to act as a lever to pry the shoulder outward. By passing a bandage around the lower end of the humerus and the man's body the shoulder is held outward; I next lift the shoulder well up in place and hold it there by a bandage over the point of the elbow and around the patient's neck. A sling to support the hand completes the dressing. The pad in the axilla must not be too large or very hard or it will make painful pressure upon the brachial plexus. Pressure must not come directly over the point of the elbow or it will cause pain and excoriation. When I wish to hold the elbow up I usually take quite a wide piece of muslin and make a sling with a small hole just where the point of the elbow comes; this, with a good layer of cotton all around the elbow makes a comfortable bandage.

This dressing must be worn for about a month, and will require frequent readjustment.

If there is no comminution of the outer fragment this man will have a good, useful arm. If the outer fragment is shattered, and it is impossible in this fat man to tell whether it is or not, there is liable to be some restriction of motion in the joint.

The Medical Record says that during the past year it has seemed to be established beyond the possibility of doubt, by Memmo in Italy, that the microbe described by Spinelli and Rivolta, and recently found in the spinal cord by Sanfelice, who used a special stain, is the specific cause of hydrophobia. Inoculation in lower animals from cultures has fulfilled all the needful data on which to base a claim of this kind.



## ORIGINAL ARTICLES.

**REPORT OF A CASE OF CENTRAL, MIGRATORY PNEUMONIA, INVOLVING THE FIVE LOBES; WITH AN APPEAL FOR THE PROMOTION OF DEEP BREATHING AND PHYSICAL TRAINING, WITH A VIEW OF SECURING A LARGE CHEST AND LUNG EXPANSION.**

By WALTER R. RAMSEY, M. D.

St. Paul.

This case is reported for several reasons:

First, because of the insidious character of the onset, and the difficulties attending the early diagnosis of a case of central pneumonia.

Second, because of the extensive area of successive involvement, and the unusual character displayed by the disease throughout.

Third, to mark the utility of the ice bag in cases with attending pleurisy.

Fourth, to especially emphasize the necessity in such a case of having previously secured a large expansion of the chest and lungs, because, I believe, that to this factor largely, the patient owes his life.

Case: Mr. W. J., a University student, 20 years of age, in previous good health; was taken with a severe chill while inspecting some bridges for his father, who is a prominent railroad official. This followed a long "cold" drive which he had taken the same day. The following day he had another chill, more severe than the previous one, and on the third day still another, so severe that he was forced to leave his work. In the interval since the first chill he felt bad and had some fever. He returned home that evening. I saw him the next forenoon (Oct. 23) in my office and his condition was then as follows: Temperature 103°, pulse 125, respiration 20 per minute. He had some cough, but no pain except a general malaise.

Examination of the chest revealed a slight lack of expansion of the right side. This was apparent only by placing one hand on each side of the chest. Percussion was negative. Auscultation revealed nothing except a few moist râles extending over the upper portion of both lungs. The tongue was coated and bowels constipated. I called it the grippe and gave him treatment accordingly, beginning with an active purgation with the mild chloride of mercury. I told him to go home and stay in bed. I saw him the same evening at his request. The temperature was still higher, 104° F., pulse 122, respiration 21. The following morning his temperature had fallen to 101°, pulse 90, respiration 20. The chest was carefully examined, but nothing new noted. The condition remained about the same with morning and evening remissions until the even-

ing of the 25th, when a small area of tubular breathing was found over the lower portion of the right lung, slightly to right of nipple line. The vocal fremitus was increased over quite a large area, and on forced inspiration a few crepitant râles could be heard. The following morning there was marked fixation of the right side of the chest, the percussion dullness was marked over the entire lower lobe with the characteristic respiratory and voice sounds of consolidated lung tissue.

There was now considerable pain, and a distinct friction fremitus could be heard low in the axillary line.

The services of a trained nurse were now secured. An ice bag was applied to the painful area. This was maintained for forty-eight hours, at the end of which time all pain had disappeared, and at no time during the entire course of the disease did it reappear in the slightest degree. The temperature now was 105° F., pulse 110 and respiration 26. The characteristic rusty sputum now appeared, persisted for two days and then disappeared permanently, although the cough still remained troublesome.

During the next few days the condition remained practically the same, the temperature varying about a degree between morning and evening.

On the morning of October 30 the temperature dropped to 101° F., then rose to 104°; and upon examining the chest, I found a distinct area of involvement in the right middle lobe which rapidly spread over the entire lobe. Temperature 104°, pulse 108, respiration 20.

Oct. 31. Temperature fell to 99.2°, then rose to 103°, and examination of the chest revealed an area of consolidation in the posterior portion of the right upper lobe. During the following twenty-four hours the dullness became marked as high up as the apex; the breathing purely tubular and the whispered voice sounds unusually distinct. I fully expected the anterior portion to become involved, but it remained perfectly clear, so clear in fact that scarcely a râle could be heard over that area. The temperature now varied between 102°-104°, pulse 98-110 and respiration 30-36.

Nov. 9. Temperature fell to 99.8° F., then up again to 104° and examination of the chest now showed an area of consolidation in the anterior portion of the lower left lobe. This soon involved the entire lobe with the exception of a small portion overlying the cardiac area. Temperature 104°, pulse 116, respiration 30.

Nov. 11. The left upper lobe became involved posteriorly. This, however, did not extend above the upper border of the scapula, and the anterior portion remained clear. Up to this time there had been no evidence of any attempt at resolution in the original areas of involvement. Moist

râles now began to appear over the entire area.

There now developed an active delirium and for the next seventy-two hours the patient slept none, despite the liberal use of bromides, and doses of sulphonal. He was now given one quarter grain of morphine hypodermatically. He quickly fell into a quiet sleep and for the next thirty-six hours was awakened only for his nourishment and stimulation. When he awoke on the morning of Nov. 15, his temperature was 98° F., pulse 84 and respiration 18 per minute. In the evening it again rose to 100.2°, but the following morning was again normal. Since that time the temperature has not gone above 99° F., and then case has gone on to perfect recovery.

During the course of the disease, repeated microscopic examinations of the sputum were made, having in mind the possibility of tubercular infection. During the first of these examinations, the "diplococcus pneumoniæ" was found in large numbers, but later these gave place to the streptococcus pyogenes, which was sometimes found almost in pure culture. From this I expected the fever would end by lysis, but instead, as has been noted, it ended by a distinct crisis, as a good "old time" pneumonia ought to do.

The treatment throughout was supportive, whiskey and strychnia being given in varying amounts, as the condition demanded.

Summary of points to be noted:

1. The pneumonia presumably began Oct. 20 with the initial chill, but being centrally located there were no physical signs by which a definite diagnosis could be made, except a slight fixation of the right side of the chest wall.

2. Each marked fall in the temperature was followed by a new area of involvement. These would seem to indicate a series of crises, but there was no evidence of resolution in the original areas of involvement until the second day previous to the final crisis.

3. There was complete consolidation of three lobes, and partial consolidation of the other two. With this enormous area of involvement, it will be noted that the respiration at no time rose above 36 and rarely went above 34. The explanation of this last observation is to my mind as follows:

For several months previous to contracting this disease the patient had undergone a systematic course of training in the gymnasium, and had, by this particular form of exercise, developed a very large expansion of the chest and lungs. This exercise consists of taking a full breath, holding it, and then going through a definite number of muscular movements. The breath is then slowly but forcibly expired and the same thing repeated again and again. This is to be done in a well ventilated and properly heated

room. In this particular case the patient was able to bring into play his "Reserve air space" and was therefore able to supply himself with sufficient oxygen. He did not have to wait for "compensation" to be established, for the uninvolved area was able to take up the extra work at a moment's notice.

Another important factor was the almost entire absence of pleurisy, and what did develop was quickly controlled by the use of the ice bag. I believe that not infrequently in pneumonia patients the embarrassment in breathing and consequent cyanosis is not so much due to insufficient air space, as to the fact that they are unable to utilize what space they have as a result of the severe pain attending the complicating pleurisy. It is unnecessary to say that in such a case the mitigation of pain is paramount; and I believe, that this can be done most effectively by the continuous use of the ice bag.

Before closing these remarks I want to thank Dr. Chas. E. Smith, who saw the patient with me on two occasions, and to whom I am indebted both for his moral and clinical support.

The Albion.

#### BLOOD.\*

BY W. D. KELLY, M. D.,

St. Paul.

The examination of the blood as a means of diagnosis is probably one of the newest and best methods, when careful and scientific methods have failed to reveal the hidden disease. Hæmatology may be looked to with some confidence to undo the apparently tangled and unyielding difficulty, in many instances with positive certainty, as for example, in malaria, typhoid, pneumonia, deep-seated suppurative ovarian tumors, gout and many other diseases. Cabot says in his introduction: "On the whole it seems to me that the examination of the blood gives evidence similar in kind and not much inferior in value to that obtained by the examination of the urine. Both methods of examination give us ready made diagnosis in a few diseases, side lights on a good many obscure conditions and frequently great assistance of a negative report. In certain wards of the Massachusetts General Hospital it has been the practice for some years to examine the blood of every patient as a matter of routine at the time of entrance.

"In a small proportion of cases this gave negative evidence only; in a much larger proportion it assisted in the making of diagnosis.

"Improvements in technique have lessened the labor and increased the accuracy of the blood examination. The most important facts about

\*Read before the Ramsey County Medical Society, September 26, 1898.

the blood of nearly every case can be obtained by a practical observer in fifteen minutes.

"The experiments of Rheinert and others have shown that with due care no error sufficient to mislead judgment need occur.

"The blood is the only tissue that we can study carefully during the life of the patient. Its relations to all other tissues are such that it is typical of them all in a way that no other tissue is, acting on all and being acted on by all. As yet we have studied chiefly its morphology and from this single aspect obtained most of the valuable clinical information which we possess.

"But the field of blood chemistry is in many respects even more promising at the present time, and there seems reason to believe that the study of the blood is still in its infancy and will take a higher place in the future as an aid to diagnosis, prognosis and treatment. Like all methods of physical examination it has especial usefulness when we cannot communicate with a patient either by reason of his unconsciousness, stupidity or insanity or because he speaks no widely used language. In such cases detection of a marked anæmia, a leucocytosis or a malarial organism may be of the greatest assistance. Malingering is often made more difficult by it and in the differentiation of organic from functional disease it is often very helpful. There is no febrile disease on which it may not throw light."

In obtaining the fresh blood it is necessary to adhere strictly to some of the many methods in order to get clean, evenly spread specimens, otherwise the results obtained will be most trying and very unsatisfactory. Probably the simplest, quickest and altogether most satisfactory method is that laid down by Neudorfer, which is as follows: Clean the lobe of the ear or finger with water, then alcohol and then ether, make a puncture either in the ear or finger, preferably the ear, by a quick jab with a three sided surgical needle, mop the first few drops of blood away with a linen cloth, then bring into contact with the lower portion of the drop the center of a cover glass, being careful not to touch the glass to the ear. This much be done quickly to avoid coagulation. Then drop another cover glass on top of this one and quickly separate, passing one glass over the other and allowing it to air dry a few moments. Then wrap in paper or an envelope and put into the incubator or copper box and heat to a temperature of 250° Fahr. Prepare the cover glass by first cleaning in absolute alcohol.

The methods and technique for staining are numerous. It will be in keeping with this article to deal with such stains as can be used by the general practitioner in his every day practice. The stains used are the so-called "double stain" and "triple stain," which are prepared by Greubler of Leipzig. The time required for staining depends largely upon the

thickness of the specimen and the length of time used in fixing. The specimen is held in a pincet and either the double or triple stain is dropped upon the cover slip, completely covering it, and is allowed to remain from five to fifteen minutes; it is then washed in water, dried between filter paper, mounted in balsam and examined with number 4 eyepiece 1-12 oil immersion lens. Label, date and write diagnosis on the specimen.

The study of the blood is made clear by familiarizing one's self with the different corpuscles, pigments, etc., in the specimen under the microscope. The morphology of the blood is best studied by a systematized division of its corpuscular elements and is divided into

1. Erythrocytes.
2. Leucocytes.
3. Blood plaques or Hæmatocytes.

The erythrocytes or red blood corpuscles are about 75 m. m. in size and are biconcave discs of a straw color, containing a della. The red cells are further divided into nucleated and non-nucleated cells. The non-nucleated cells are:

1. Poikilocytes.
2. Megalocytes.
3. Microcytes.

The megalocyte is the largest sized blood corpuscle, above 9 m. m., and the microcyte is the smallest size red cell; they vary in size from 2-5 m. m. to 5 m. m. The poikilocyte is the partially or wholly misshapen cell. The nucleated red cell is divided into normablast, megaloblast and microblast, the same as above, except they contain a nucleus. The nucleated red cells are only present in the blood forming organs in the adult and never appear in the circulating blood, except in pathological conditions.

The leucocytes are divided into:

- Polymorphonuclear.
- Polymorphonuclear.
- Small mononuclear.
- Large mononuclear.
- Eosinophiles.
- Mast cell.

Leucocytosis is divided into physiological and pathological. Digestive leucocytosis, absent in cancer of the stomach, is produced (physiological leucocytosis), by pressure on the stomach and intestines, and by positive chemotactic action of the peptones. It occurs in the new born child; in pregnant women; before death; and after certain drugs.

Pathological leucocytosis occurs in acute inflammation; in infectious diseases with fever, such as pneumonia, scarlet fever, meningitis, acute suppurative erysipelas and diphtheria; Chronic leucocytosis. In cancer and secondary anæmia the red corpuscles are changed. The change may be a slight decrease in the hæmoglobin, in the number of cells and their regularity in size and shape. If there is great de-

struction of the red cells associated with leucocytosis, it is secondary anæmia.

The importance of blood counting cannot be too strongly urged and is best done with a Thoma-Zeiss. The average number of blood corpuscles found in a cubic millimeter of blood is 5,000,000. In the same quantity of blood 10,000 leucocytes are usually present. The Thoma-Zeiss instrument is used by drawing up into the pipette after the blood starts to ooze from the ear a column of blood to point 0.5, then Gower's fluid to 101. Mix thoroughly and blow out a few drops of fluid remaining in the lower part of the pipette; then allow a drop of the proper size to escape into the counting chamber; then allow the cover glass to fall upon it in such a manner as to cover the whole disc without spilling any into the "moat" around it. If properly adjusted the Newton rings can be plainly seen, then counting can be made with the No. 4 Leitz and No. 2 eyepiece. On the ruled spaces at least sixteen squares should be counted and two counts should be made. In case the white cells are to be counted used the above method with Toisson's solution.

Hæmoglobin estimation is usually made either with the Fleische or Gower apparatus or by the specific gravity. The Fleische instrument gives probably the most accurate demonstration.

The specific gravity method is the most accurate for all practical purposes and is easily performed with the chloroform-benzol mixture, adding sufficient of one and the other to suspend a drop of blood, then noting the specific gravity. If the sp. gr. is 1059 it is equivalent to point 100 hæmoglobin.

An increase of red cells is always relative and occurs in diseases in which there has been a morbid loss of plasma, as in cholera or dysentery. A decrease of the erythrocytes is called oligocythæmia.

An increase of the leucocytes is called leucocytosis and occurs in many acute and chronic diseases. Increase of a red cell is called leucopenia, occurring in typhoid, measles and in primary pernicious anæmia. The alkalinity of the blood is increased sometimes so decidedly that it is regarded by Gruber as almost pathognomonic of chlorosis.

Jaccoud believes that fever would be more frequently found in chlorosis if sought for, and deficiency of oxygen in the blood acts as an exciter of the chlorific centers.

Neusser and Neudorfer have advanced a theory that the occurrence of perinuclear basophilia during tuberculosis is a favorable sign and denotes a system capable of resisting the tubercular infection. Neusser has found this to hold in a certain number of cases, tending to show that whenever basophilia (the mark of a uric acid or xanthin diathesis) exists, as in gout, bronchial asthma and leukæmia, tuberculosis rarely occurs.

From this he concludes that the presence in the system of an excess of alloxan bases (xanthin, uric acid, etc.) makes it hostile to the reception or spread of tuberculosis. When tuberculosis does exist with uric acid diathesis (shown by perinuclear basophilia) the tubercular process tends to cicatrize and heal.

In Mikulicz' surgical clinic at Breslau, all the patients have their hæmoglobin tested regularly. In this country the surgical portion of the profession does not as yet take hold of blood examination, and many questions about the blood in surgical affections remain unanswered. Mikulicz lays down the following rule: "Never operate on any case when the hæmoglobin is below 30 per cent." The question of operating at once or waiting for recovery from shock is a very common one in the accident room of any hospital, and is settled on general impressions of the patient's vigor. We now say he has lost blood but we have no way of ascertaining how much of his shock is due to hemorrhage. He may need transfusion; if it is due to cerebral hemorrhage; in cerebral concussion or compression the transfusion will do more harm than good. The blood count can settle these questions and would reveal much that is now obscure, if it were more frequently employed in surgical cases and at a standard like that of Mikulicz' worked out. In the cases of suspected ruptured tube in extra-uterine pregnancy, the question of concealed hemorrhage can be distinguished from peritonitis, obstruction or any concealed hemorrhage, as for instance, from ruptured kidney, spleen or liver which may be indicated by the blood count when by other physical signs the diagnosis might be very difficult. Unfortunately most of the original investigations upon the subject are published in German, Italian and French. The bibliography given by Cabot in his work shows that Osler, Thayer, Stengel, Coles and Rotch are the only English authors whose works are of any importance. It is hoped that in the near future our students will be given as thorough instruction in hæmatology as in urinalysis and bacteriology.

I wish here to introduce an instrument which I consider simple, efficient and very economical; it does away with the incubator as far as fixing the blood specimens is concerned, does not prevent the use of the incandescent lamp for lighting purposes, gives an uniform heat and with a thirty-two candle power lamp will give you in from five to eight minutes a temperature not higher than 250° F. The objection to the alcohol lamp used in fixing and the Tong copper slide are all done away with. I conceived the idea after spoiling several hundred specimens from the copper method alcohol flame and incubator. I trust it may prove useful in other hands and it is as you can see, of simple construction.

## CONCERNING THE MANAGEMENT IN CERTAIN CASES OF OBSTETRIC DYSTOCIA.\*

BY FRANKLIN STAPLES, M. D.,

Winona, Minn.

The term obstetrics is from two Latin words which together mean to stand before. This would seem to indicate position or post of duty for the obstetrician, and suggests important function and responsibility, no less than what pertains to the position of vanguard in the emergencies of childbirth.

Practical knowledge concerning action, what, when and how, is best gained from one's own experience and from intelligent observation of what others have done. Experience teaches that there is a true and desirable mean between meddling and neglectful midwifery, and to reach it requires good judgment and a disposition to do the best thing.

Exact rules for management in cases of difficult labor may not well be given. Conditions and complications are found to be so varied that only general directions may be admissible; details must always be accompanied by provisos. A certain distinguished ovariologist was accustomed to say to his pupils: "In opening the abdomen always be prepared for emergencies. In spite of good general diagnosis, be prepared for the unexpected." This good direction may well apply to other procedures in surgery and to much in obstetrics as well as to laparotomies.

Of the many conditions in which assistance is required in childbirth, together with judicious election in management, the following few may have our attention in this brief paper. The selection of conditions and cases shall be from common rather than exceptional experience:

I. Tedious labor, as it occurs frequently without unusual or extraordinary complications.

This may be caused by closeness and rigidity of the soft parts and the resulting slow dilatation impeding progress, with position and presentation normal, and without the existence of vaginal or cervical atresia, intrapelvic tumors or pelvic deformities. Causes of abnormal rigidity of the cervix may be interstitial induration and hypertrophy from chronic inflammation, redundancy of surrounding adipose tissue, from thickness and firmness of muscles, or deficient and irregular nerve action. The age of the parturient woman at the first delivery has its importance. The following record of a case shows what may be expected in first labor in early life: A primipara, English-American, age 14 years, 3 months, well developed; labor normal, easy and

not prolonged; child  $7\frac{1}{2}$  pounds, born at full term, well developed.

In contrast with this we will suppose a case, not uncommon, of difficult labor, with dystocia due to the conditions before mentioned. Several hours have passed, labor continues in the first stage, pains appear to be more annoying than effective, an elongated cervix is slow in beginning to dilate, the rounded form of the cervix is felt as the head begins to engage in the superior strait, and the finger may with some difficulty be passed through the still rigid cervix to the scalp covered by the membranes which are fortunately intact.

The question of procedure. The physician, in view of other pressing business, perhaps may say to his patient, "It will be some time before you will need my aid. I will retire and return later." Ordinarily this is wrong. His presence and good assurance are of especial advantage to the patient at this time. He must take care to possess her confidence, and, by not doing the wrong thing, make himself worthy of it. Unless grave complications present themselves, and conditions arise other than what has appeared, it would be bad practice for the physician, in his anxiety to relieve suffering, to become impatient of delay, and to yield too soon to the possible entreaties of his patient, and proceed at this time to forcibly hasten the delivery by artificial aid. If the pains are ineffectual, a full dose of quinine may be given. Ergot is not admissible at this stage and with this condition. Tonic contraction in a protracted first stage of labor may endanger the life of the child. Rhythmical or intermittent uterine contractions are nature's safer and more effectual means of relieving the gravid uterus of its contents. In the case here considered the dorsal position is generally chosen, for one reason that in this the weight of the contents of the uterus aids in the line of expulsion. Moderate efforts at dilating the cervix with the fingers, not too often nor too continuously applied, are helpful. The anæsthetic may now be used to reduce the nerve tension if necessary, but its use should be guarded and not too continuous. Sometimes temporary rest may be secured by the use of an anodyne, and the renewed energy acquired thereby will more than compensate for the apparent delay. Time and suitable management will most likely afford opportunity for and aid the uterus and the parturient canal in the structural changes necessary for the descent and passage of the child in safety, and with the minimum degree of danger to the maternal parts.

The aid of forceps may be in place at the proper stage of labor, and judicious election may determine the time of application. A word in general concerning forceps delivery may be allowed. With the exact position of the foetal

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head and the form and directions of the different parts of the pelvic canal in mind, the forceps may be properly applied. Haste and force in application are to be avoided. The forceps applied, the following is the order: Advance slowly; use traction always in right directions; the degree of force varies regularly to conform to the intermittent uterine contractions. It is not a tooth-pulling operation; the individual whose head is in the forceps' grasp is presumed to have its rights. In forceps delivery a skillful hand, well guided, will not force, but endeavor to aid nature in a manner to favor the chances of life for the child, and to reduce the danger of injury to the parturient canal to the minimum.

## II. Malpositions and presentations.

Of the many possible positions and presentations of the child in labor, that of the vertex occipito-lateral coming to occipito-anterior is most common, most favorable and one strictly normal. Suggestions for management in a single abnormal condition in this general class may be given here.

In a breech presentation with the limbs of the child flexed upon the body, allow this condition to remain until the child's pelvis is fully delivered before extending the limbs. The child's pelvis with the thighs thus flexed serves better to dilate the vagina and perineum than would the pelvis alone with the limbs extended. The way is thus prepared for the easier passage of the head. The ready delivery of the head in these cases is the matter of main importance, and requires the presence and ready aid of the accoucheur.

## III. Certain pelvic abnormalities.

There are various abnormalities of the female pelvis resulting from different causes, prominent among which are those which have resulted from a rachitic condition of the bones in early life. Various diseases of the pelvic bones and of the lower lumbar vertebræ resulting in exostoses, etc., are also causes of serious deformity. Some of these render delivery through the pelvis impossible, and others are such as to cause dystocia in a greater or less degree, but not always preventing successful delivery under good obstetric management.

1. In pregnancies whose delivery per vias naturales is impracticable, election may be between the Cæsarian section, symphysiotomy and embryotomy. The destruction of the fœtus by the operation of embryotomy is less frequently done, since the improvements in technique and asepsis in surgery have rendered the Cæsarian section a safer and better operation than was formerly the case. The expansion of the pelvis by section of the symphysis pubis was first done by Sigault, in 1877. The method, never having been extensively adopted, was revived as late as

1890 by the publications of Pinard of Paris and Harris of Philadelphia, in which statistics showing favorable results were presented. The practical work on Obstetric Surgery by Grandin and Jarman of New York gives a full account of the operation, its indications and the record of its results, but speaks with caution concerning its adoption in private practice, observing that "however bright the prospects of the operation are for the future, it still remains true that for the present it will find its chief field in maternity hospitals."

The Cæsarian section has received encouragement by results obtained through improved technique in the operation under modern asepticism, especially when performed before the beginning of labor and with all the precautions and preparations which are required in other laparotomies.

2. Where safe delivery may be generally expected. Management in cases of pelvis narrowed in the conjugate diameter—what is called the flat pelvis.

The following case concerns management in dystocia from a not uncommon pelvic deformity, which may not be such as to prevent possible delivery: antero-posterior narrowing of the superior strait:

Mrs. A., aged 30, in general good health, is in her second labor. First labor is said to have been difficult. She was delivered by craniotomy after attempts at forceps delivery had failed. At this time when first seen she had been in labor several hours, liquor amnii had escaped, uterus contracted on the child, uterine tumor prominent above symphysis pubis, os uteri somewhat dilated, reached with difficulty, position transverse, vertex not engaged because of antero-posterior narrowing and inclination of superior strait. Delivery was effected with difficulty by version, child dead because of long pressure of the contracted uterus on the child, child's body entire, no harm to maternal parts. The same patient in her third labor gave a record as follows: Patient seen earlier, condition as before, except that the membranes had not been ruptured, os fairly dilated, delivery by version without difficulty, child alive, uninjured. Version rather than attempts at forceps delivery chosen for the reason that in practice it has afforded better results. The following account referring to the literature of the subject has been published: "In 1875 an earnest discussion of this question was had in the Philadelphia Obstetrical Society by the elder Dr. Hodge, in a paper prepared shortly before his death, taken up by his son, H. Lenox Hodge, and Dr. Edward Wilson on the one side, and by Dr. William Goodell and Dr. R. Stewart on the other, all of Philadelphia. The use of forceps in such cases, compression of the fœtal head by the cephalotribe, craniotomy and

delivery by version, each of these and other procedures had their place in the bill of ways and means.

"The American Journal of Obstetrics," in several numbers of the volumes for 1875 and 1876, has the papers of this discussion. It is a literature of the subject well worth reading. Drs. Hodge and Wilson for the most part favored the forceps and cephalic delivery, Dr. Goodell was the strong advocate of version and Dr. Stewart took intermediate grounds." Dr. Goodell's conclusions were, that in pelves narrowed in the conjugate diameter, the head not engaging in the superior strait, turning is generally to be resorted to; but in pelves uniformly contracted the forceps is the better means of delivery.

#### IV. Albuminuria and eclampsia.

Much has been written concerning the pathology of eclampsia in the puerperal state, attended as it usually is by albuminuria. Whatever else may be found to be true, it is known that certain pathogenic substances reach the nerve centers, and, either of themselves or aided by additional irritation attendant upon efforts at delivery, cause the convulsive action.

For cases of this class the practical direction to the obstetrician is this: Be acquainted as far as possible with the condition of your patient during the period of pregnancy. Test for albumen, the existence of which is only incidental, but valuable in diagnosis; look for œdema and for cerebral symptoms. Endeavor to equalize the circulation and eliminate toxic material by promoting especially intestinal excretion. Let the kidneys be relieved of possible existing engorgement by the free action of other excretory organs.

While in the presence of convulsions chloroform will serve to diminish irritability of the nerve centres, and thus modify convulsive action, the immediate indication is to relieve the uterus of its contents in such a manner as in the case may be most suitable. The following report of a case copied from an old record will illustrate:

Mrs. P., age 21, rather fleshy, some œdema, albumen, pregnancy nearly or quite at full term. First convulsion occurred at the beginning of labor, convulsions soon became severe and frequent, mind not clear between attacks, pains parently increasing, no dilatation found on first examination. Chloroform was carefully given, os gradually dilated by aid of fingers and hand. When able to pass the clenched hand through the cervix, ruptured the membranes and delivered by version; child alive, no post partum convulsions. So favorable a result may not always be expected.

For management after confinement, if albuminuria continues with evidence of uræmic poi-

soning, nitroglycerin, supporting remedies and evacuants are in order.

#### V. Anæsthesia in obstetrics.

The anæsthetic is admissible in normal labor when used with discrimination and timely, and is generally demanded in cases of dystocia. Chloroform is properly chosen in the majority of cases; it is claimed that it is better borne in the puerperal state than in other conditions. For the lighter degree of anæsthesia required in obstetrics, it is more easily managed and more agreeable to the patient than other anæsthetics. Careful attention is given as to the time of administration, the degree of anæsthesia and the continuance.

#### VI. Asepsis in obstetrics.

The attention of the medical world was called to a matter of vast importance about fifty years ago by Oliver Wendell Holmes in an essay on "Puerperal Fever as a Private Pestilence," dedicated to the medical students and graduates of Harvard University. The paper showed clearly the contagiousness of puerperal fever, something of its relation to other infectious diseases—notably erysipelas—and the danger of its being carried from one patient to another by the physician or other attendants. In his opinion, especially concerning the method of transmission of the disease, he was opposed by prominent teachers in some of the larger medical schools at that time. A half century of progress in preventive medicine has wrought changes and increased our knowledge of the nature and behavior of various infections, and the present consensus of opinion is now altogether on the side advocated by Dr. Holmes. A physician or nurse having been exposed by contact to a malignant infection, in addition to all possible aseptic cleansing should avoid attendance in obstetrics for a reasonable period.

Showing the result of the advance to the asepticism in good obstetric practice at the present time, the words of a recent author may be given: "While more accurate educational methods enter as factors into the science of obstetrics as practised to-day, the fundamental reason why the mortality rate has been lowered is the recognition of the culpability of a man who neglects the laws of cleanliness (asepsis and antisepsis) throughout the conduct of labor and the thorough attention to the person of the accoucher, the nurse and assistants, the lying-in woman, the instruments and accessories." (Grandin and Jarman).

The obstetrician's outfit for good obstetric work should never be without the material for rendering hands, instruments and appliances absolutely sterile, which should be brought into timely use in all cases. It should contain the necessary instruments and material for the immediate repair of the lesions incident to partu-

rition, which work should be in the hands of an operator competent for good and prompt action in emergencies.

The duty of the physician in the practice of obstetrics is not limited to his services as an accoucheur and obstetric surgeon. The province of his vocation extends to that of teacher of good practice and care in the lying-in room, an important part of which pertains to the standard of practical cleanliness in the minds and works of all persons in any way belonging thereto. The time has come when a knowledge of what constitutes asepticism, and the ability to meet its requirements, are the necessary essentials of practice in any of the departments of medicine and surgery.

### A PLEA FOR THE EARLY DIAGNOSIS OF CONSUMPTION.\*

By C. F. DENNY, M. D.,

St. Paul.

There is perhaps no disease which is more universally distributed over the whole world than tubercular disease. Tuberculosis affects the rich, the poor, the young, the old; mankind and animals are all subject to it alike. Its mortality is great. Its prevention possible. Its cure attainable. Yet in the face of such facts it is daily overlooked; the golden opportunity is lost, and another victim is added to the ranks of incurables.

Why does this state of affairs exist with the present state of knowledge of the disease? The specialist in this field cannot be blamed; he constantly sees the lost opportunities and calls attention to them. The average general practitioner cannot surely be ignorant of it, or of the signs for its detection. The fact still remains that it is daily overlooked by those whose avocation should fit them for its detection. The means are always at hand. The patient's history, auscultation, percussion, the microscope, the thermometer, all are ever ready to unfold the earlier signs of this unfortunate condition to those who use them rightly and intelligently.

How many a patient is glanced at, his tongue inspected and his pulse felt and told he has a slight cold or may be a bilious attack? No chest examination is made or temperature taken, no inquiries are made as to expectoration, no sputum examined. The fee is paid and the poor unfortunate is defrauded of the golden opportunity of an early diagnosis. After a year or more has elapsed he learns he has consumption, and begins the race for life. How many times this

thing has been forcibly brought to my attention and to the attention of other physicians is an old, old story.

These mistakes, or better careless errors (they deserve no better name) should no longer exist in the light of present knowledge. Our relation to the general public health should make it a duty to use every means in our power to discern this affection. By so doing we protect others and give the patient the best chance for recovery. The thoughtful general practitioner is doing a good work in this field, and thanks to his painstaking endeavors many a life is saved or prolonged.

Some other thoughts in this line come to my mind in reference to the laity.

Is it not uncommon to hear the remark: "He is a consumptive and has no business to be about endangering the well?" Now while it is admitted that if we could isolate every case and put it in a community by itself the disease could be far better controlled, still this can never be accomplished, nor do I believe it would be best. Let us stop and consider a moment. Has not the poor consumptive any feelings? Does he or she wish to be treated as a leper? Is not that in itself a depressing agent in a disease which tasks all the recuperative powers nature can command to overcome it? What we, as physicians should do is to educate the patients in the proper care of themselves in relation to those about them. Tell them kindly just how they are liable to be a source of danger. By so doing we not only educate them, but educate the well in avoidance of risks from the disease.

The better classes are already beginning more and more to appreciate these risks. Our health departments are doing good work and could do much more by giving more attention to tuberculosis and the prevention of its dissemination. Corporations which employ large numbers of workers in confined quarters should be instructed as to the best methods of making their places least dangerous to themselves and to those working for them. Transportation companies should be told of all these things officially by the health department, and asked to endeavor in every way to promote the practical working out of these measures. Of late years much of this has been done, but more remains, and legislation in this respect would bring about a still better state of affairs.

The hasty sending away of a consumptive to some distant place for climatic cure without any previous thought as to its adaptability to the case in hand, is too often the source of much suffering and hastens the step toward death. Many a case is far better off at home than in any health resort, for pecuniary reasons. Even those with unlimited means should have a climate adapted to the phases of their individual

\*Read before the Ramsey County Medical Society, December 26, 1908.



case and then not allowed to go where no reliable physician can guide them in the treatment of themselves.

It is in this very particular that the sending of a case to a sanitarium is productive of so much good. The patients are taught how to take care of themselves in a way impossible to be accomplished at home. Besides they have an incentive to do anything thoroughly as others are there doing the same thing. The sending away of a patient in the last stages of the disease from home and friends to die in a short time is a mistake that no longer should be made. In the earliest possible time the patient had better be told he is tuberculous and encouraged to take proper care of himself, holding out encouragement to complete recovery wherever it can be given, explaining the weary road he will have to follow and the never faltering attention to his physical health.

It is a mistaken kindness ever to hide this disease from patients as you must have their hearty coöperation for its successful treatment. If every physician would always bear in mind the full responsibility of the early diagnosis of tuberculosis, great and lasting good would result to the community, and an incalculable benefit would be conferred on the science of medicine.

485 Endicott avenue.

#### Effect of the Removal of the Uterine Appendage.

From Dr. E. C. Dudley's recent work on gynæcology. The removal of the diseased appendages has been usual in hydrosalpinx and is the rule in pyosalpinx. The operation, if thoroughly performed, is generally followed by atrophy and consequent arrest of function in the uterus. It result should be to precipitate the natural menopause.

The artificial production of this critical period gives rise to phenomena quite similar to those which characterize its natural course, except that in most cases menstruation is at once permanently arrested. The popular impression that the operation unsexes the woman in a mental sense or renders her masculine is a mistake. Patients frequently ask whether it will result in the growing of a beard or the development of a base voice, but no such result has ever been observed. The operation performed upon a young girl, would doubtless arrest the intrapelvic and some of the extrapelvic developmental processes of puberty, but the development once made is permanent.

The effect of the operation upon the sexual desire is variable, but probably no more so than that of the natural menopause.

The question of insanity as a result of the operation has been raised; it probably occurs no more frequently than after other operations of equal gravity, positively not oftener than with the natural menopause.

The primary object of the operation is the removal of certain organs which would otherwise be dangerous to life or destructive to health. A most important secondary result is the arrest of physiological function in the remaining uterus. In this connection it is clear that, since pathology is physiology modified by disease, the atrophic changes in the uterus consequent upon the operation may, at the same time that they arrest physiological processes, also put an end to the pathological processes. Especially is this true in the inflamed uterus, the disease of which is often perpetuated by the constantly recurring menstruation. The frequent disappearance of metritis from the atrophic uterus verifies a recognized principle, that physiological rest may favor the cure of disease. If the uterus is healthy or only the seat of mild catarrhal inflammation, it will usually, upon the removal of the appendages, go rapidly into the atrophic state, and will give no more trouble than would a uterus after the usual menopause. Unfortunately, however, this very common sequence of the removal of the appendages is not constant. The atrophic process does not always follow, or, if present, may fail to remove the infection. The infected uterus may be the source of pernicious menstruation, amounting at times to menorrhagia. A surviving and intractable endometritis often gives rise to profuse uterine discharges. Exhaustive drains upon the patient's strength from such cause may destroy her resistance to disease, reinforce the uterine infection and perpetuate a group of disabling nervous symptoms.

Dauber, in the London Lancet, gives as the method of Professor Tscherning, of Copenhagen, for the dry sterilization of catgut, one which is in effect that of Dr. E. Böclmann, of St. Paul, and very similar to that employed by several American manufacturers of surgical supplies. It is as follows: The commercial gut as it comes from the manufacturer is placed in the trays of a sterilizer between sheets of cellulose paper. It is then heated for an hour at 150 deg. F. and for a second at 280 deg. F. It is now sealed in cellulose-paper envelopes, and these in larger ones of the same material and replaced in the sterilizer for another two hours at 280 deg. F.

Whittaker says that chloral dissolved in peppermint water will promptly check vomiting in children. The dose varies from half a grain to two grains according to age.

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## THE LAWS RELATING TO THE PRACTISE OF MEDICINE IN MINNESOTA.

Now that the air is full of bills and rumors of bills for the regulation of the licensing of physicians to practise medicine in Minnesota, it is a good time to call the attention of medical men to the laws already in force which affect them in their practice. Unless the physicians of the state are, in general, better posted in regard to these laws than is apparently the case, some of the provisions to be found in the statutes will be something of a surprise to the reader. At any rate it will do no harm to have attention called to the laws again and to refresh the memory of those who are already familiar with them.

In 1891 an act was passed to regulate the practice of midwifery as follows:

An Act to regulate the Practice of Midwifery in the State of Minnesota.

Be it enacted by the Legislature of the State of Minnesota,

Section 1. That every person practicing midwifery in any of its branches shall possess the qualifications required by this act. Every person hereafter beginning the practice of midwifery in this state, if a graduate in midwifery, shall present his or her diploma to the State Medical Examining Board for verification of its genuineness. If the diploma is found to be genuine and the person named therein be the person claiming and presenting the same, the board on payment of a fee of one dollar (\$1.00), shall issue a license to that effect signed by the president and secretary of said board, and bearing the seal of said board, and such license shall be conclusive as to the right of the person named therein to practice midwifery in this state

for the period of one year. If not a graduate, such person shall appear before the board and submit to such examination in midwifery as the board shall require; and if the said examination be satisfactory to the examiners, the said board shall issue its license in accordance therewith, on payment of a fee of two dollars (\$2.00), and the person named therein shall be entitled to all the privileges and rights hereinafter mentioned for the period of one year.

Sec. 2. All persons heretofore practicing midwifery in any of its branches in the State of Minnesota shall register their names with the Secretary of the State Medical Examining Board with an affidavit duly executed before a notary public, or with a written certificate from some legally authorized practitioner of medicine, setting forth the time and places in which such person has been engaged in the practice of midwifery in the State of Minnesota, and upon the filing of such certificate and the payment of a fee of one dollar (\$1.00) to the secretary of said board, the board shall issue to such person a license signed by the president and secretary of said board, and bearing the seal of said board, which license shall entitle the person named therein to all rights and privileges hereinafter mentioned for the period of one year.

Sec. 3. Every person so licensed shall each year subsequently register his or her name with the secretary of said board, and shall pay to the secretary of said board a fee of one dollar (\$1.00) and the secretary shall issue a license to such person in accordance therewith.

Sec. 4. The State Board of Medical Examiners are hereby authorized and empowered to execute the provisions of this act, and shall hold examinations of candidates for licenses in midwifery at the Capitol on the first Tuesdays of January, April, July and October and at such other times and places as may be deemed expedient.

Sec. 5. The State Board of Medical Examiners may refuse licenses to persons guilty of unprofessional or dishonorable conduct, and may revoke licenses for like causes, or for neglect to make proper returns to the various health officers of births, deaths and cases of puerperal fever and other contagious diseases occurring in their practice.

Sec. 6. Any person shall be regarded as practicing midwifery within the meaning of this act, who shall publicly profess to be a midwife, or who shall for a fee attend to women in childbirth, but nothing in this act shall be construed to prohibit students of medicine or midwifery practicing under the direct supervision of a preceptor, or to prohibit gratuitous services in cases of emergency. This act shall not be applied to physicians and surgeons duly authorized by the State Board of Medical Examiners or to commissioned surgeons of the United States army or navy.

Sec. 7. Any person practicing midwifery in this state without first complying with the provisions of this act shall be punished by a fine of not less than ten dollars (\$10.00) nor more than fifty dollars (\$50.00), or by imprisonment in the county jail for a period of not less than ten (10) nor more than thirty (30) days.

Sec. 8. All acts or parts of acts inconsistent herewith are hereby repealed. This act shall take effect from and after its passage.

In 1893 an act was passed to prevent blindness in children from ophthalmia neonatorum, which is said to be responsible for the condition of about half the inmates of the blind asylums of the country. It is safe to say that no law was ever more completely ignored than this one has been since its passage, and yet it is a good law in intention, although one under which it would

be likely to be somewhat difficult to obtain convictions because of the obstacles in the way of fixing the responsibility. The law is as follows:

An Act to prevent Blindness in Children.

Be it enacted by the Legislature of the State of Minnesota.

Section 1. Whenever one or both eyes of an infant become inflamed reddened, or diseased at any time within two months after its birth, it shall be the duty of any midwife, nurse, or any other person having charge of such infant, to report the fact of such affection of the eye or eyes, in writing and within twelve hours after the ascertainment of the fact of such inflammation, to the health officer, county physician or some legally qualified practitioner of medicine of the city, town or village, or immediate vicinity of the persons having charge of said infant.

Sec. 2. It shall be the duty of any health officer, or county physician to whom may have been reported any case of eye disease in a newly born child, to forthwith visit said child, and to take immediate medical charge of the treatment of said child, provided that said child be not already in charge of a competent medical practitioner.

Sec. 3. Any failure to comply with the provisions of this act shall be punished by a fine, not to exceed one hundred dollars, or imprisonment not to exceed three months.

Sec. 4. This act shall take effect and be in force from and after its passage.

The act to provide for the collection of vital statistics relates chiefly to the duties of county officials and health officers and need not be given entire, but section 3, which describes the duties of physicians in the matter, is as follows:

Any physician having attended a person during his last illness, shall, within ten (10) days after the decease of such person, furnish for registration to such clerk, or health officer, a certificate of the duration of the last illness, the name of the deceased, his age, the disease of which the person died and the date of his decease. And any physician or midwife having attended a case of confinement, shall, within ten (10) days thereafter, furnish for registration to said clerk or health officer, a certificate of the date of birth, sex and color of the child, with the names, dates and places of birth of the parents. If any physician or midwife neglects to make such certificate, he shall forfeit the sum of twenty-five (25) dollars, to be collected as other fines are collected by law.

The most important part of the legislation relating to medical matters in the state is that which deals with infectious and epidemic diseases. It forms Chapter 132 of the laws of 1883, and is given in full because it is important that physicians should know just what powers the boards of health have over contagious disease. The doctor is often consulted about the legal as well as the medical aspect of a contagious case and should be able to tell the patient and family all about the law regulating the matter. The particular sections of the act that prescribe the duties of physicians and declare the penalties for neglect of such duties are Sections 20, 21 and

23, and the blanket penal clause, Section 30, which provides a general punishment for those offenses against the law not specifically provided for.

It will be seen that the present law gives health officers a great deal of power, a power which they are wisely slow to use, reserving interference for aggravated cases of neglect or violation of the law. Every physician must know of many violations of both the spirit and the letter of the law; indeed its strict enforcement would keep the courts constantly busy, and must stir up public feeling against the health office to an extent that would threaten the existence of the whole law.

It is the sections of the law already named referring to the duties of physicians on discovering contagious cases that have furnished one of the strongest weapons against the osteopaths' bill, against which the licensed physicians of the state are waging war in the legislature. The danger that the ignorant osteopath would fail to recognize and report contagious disease is apparent to every legislator, no matter how dense he may be on medical matters in general, and they must hesitate to pass a bill that will put a premium upon the spread of epidemics.

The law reads as follows:

An act relating to infectious and epidemic diseases, and the preservation of the public health. (With amendments to April 26, 1895.)

Be it enacted by the Legislature of the State of Minnesota:

Section 1. Whenever any part of this state appears to be threatened with, or is affected by, any epidemic or infectious disease, the State Board of Health may make, and from time to time alter and revoke, regulations for all or any of the following, among other purposes: (1) For the speedy interment of the dead. (2) For house to house visitation. (3) For the provision of medical aid and accommodation for patients, physicians and nurses. (4) For the promotion of cleansing, ventilation and disinfection; and (5) Guarding against the spread of disease by quarantine or exclusion of any infected persons, and may by order declare all or any of the regulations so made to be in force within the whole or any part of the district of any Local Board of Health in this state and to apply to any vessel on any of the waters of this state or to any railway cars or trains or public vehicles of any kind, for the period named in such order, and may by any subsequent order abridge or extend such period.

Sec. 2. All regulations and orders so made by the State Board of Health shall be published in some paper of general circulation published at the capital of the state, and also in some paper published in the county where such disease may exist, and such publication shall be conclusive evidence thereof for all purposes.

Sec. 3. The Local Board of Health of any district or districts within which, or part of which regulations

so issued by the State Board of Health are declared to be in force, shall superintend and see to the execution thereof, and shall appoint and pay such medical or other officers or persons, and do and provide all such acts, matters and things as may be necessary for mitigating or preventing the spread of any such disease, or for superintending or aiding in the execution of or executing such regulations as the case may require; said Local Board may also from time to time direct any prosecution or legal proceedings for or in respect of the willful disregard or neglect of any such regulation, or any regulation duly made and established by said Local Board. Said Local Boards shall have power of entry on any premises, vessel or vehicle, for the purpose of executing or superintending the execution, of any regulations so issued by said State Board of Health or said Local Board.

Sec. 4. The town supervisors of each town, together with a physician, to be employed by said supervisors when in their judgment necessary, or when ordered by the State Board of Health, shall constitute a Board of Health, and all villages, boroughs and cities shall have a Board of Health, to be chosen and to consist of the number hereafter provided, anything in the charter of any such village, borough or city to the contrary notwithstanding; such Board shall, within their respective towns, villages, boroughs and cities, have and exercise all the powers necessary for preservation of the public health. Said village, borough or city Board shall consist of not less than three (3) members, one (1) of whom shall be a physician, and such physician shall be health officer and executive of the Board, and shall receive such compensation for his services as the council, or other bodies answering thereto, of the village, borough or city shall determine. Said Board shall be elected by the council, or other bodies answering thereto, of each village, borough and city on the first (1st) Monday of April, A. D., one thousand eight hundred and eighty-five (1885). One member of such Board shall be elected for and hold such office for the term of three (3) years, one for two (2) years, and one for one (1) year, and one member of such Board shall be so elected annually thereafter, and all vacancies occurring in said Board shall be filled in like manner. It shall be the duty of the health officer to perform and superintend the work prescribed in this act and shall perform such other duties as the Board may require. He shall furnish to the Board such information cognate to this act as from time to time they may deem necessary, and to make once in each year, in the month of May, and oftener if necessary, a thorough sanitary inspection of said town, village or borough or city, and present a written report of such inspection at the next meeting of the Board of Health, and he shall forward a copy of said report as soon as rendered to the State Board of Health; and he may at any time, when necessary, examine into all nuisances, sources of filth and causes of sickness, and said Board may make such regulations respecting the same as they may judge necessary for the public health and safety of the inhabitants, and every person who shall violate any order or regulation made by any board of Health, and duly published, shall be deemed guilty of a misdemeanor, and punished by a fine not exceeding one hundred dollars (\$100), or by imprisonment in the county jail not exceeding three (3) months. (As amended by Chap. 4, Laws of 1885.)

Sec. 5. Notice shall be given by the Board of Health of all orders and regulations made by them, by publishing the same in some newspaper, if there is one published in such town. If there be none, then by posting up such notice in five (5) public places therein; and such publications of said orders and regulations shall be deemed a legal notice to all persons.

Sec. 6. Whenever any nuisance, sources of filth,

or cause of sickness is found on private property, the Board of Health shall order the owner or occupant thereof, at his own expense, to remove the same within twenty-four (24) hours; and if the owner or occupant neglects to do so, he shall forfeit a sum not exceeding fifty dollars (\$50), to be recovered in the name of and for the use of the town, city or village.

Sec. 7. Whenever such owner or occupant shall not comply with such order of the Board of Health, said Board may cause the said nuisance, source of filth, or cause of sickness to be removed, and all expenses incurred thereby shall be paid by the said owner or occupant, or by such other person as has caused or permitted the same.

Sec. 8. Whenever the Board of Health thinks it necessary for the preservation of the health of the inhabitants to enter any building or vessel in their town for the purpose of examining into and destroying, removing or preventing any nuisance, source of filth, or cause of sickness, and shall be refused such entry, the health officer or any member of the Board may make complaint under oath to a justice of the peace of his own town, stating the facts in the case so far as he has knowledge thereof.

Sec. 9. Such justice shall thereupon issue a warrant, directed to the sheriff or any constable of the county, commanding him to take sufficient aid, and being accompanied by two (2) or more of the Board of Health, between the hours of sunrise and sunset, to repair to the place where such nuisance, source of filth, or cause of sickness complained of may be, and the same destroy, remove or prevent, under the direction of the members of such Board of Health.

Sec. 10. All Local Boards of Health and health officers shall make such investigations and reports, and obey such directions as to infectious diseases, as shall be directed by the State Board of Health. And any member of any Board of Health, or health officer, who shall neglect to perform the duties required of him under the provisions of this act, or any other act relating to the duties of the Board of Health or health officers of this State, or who shall neglect or refuse to obey any reasonable directions as to infectious diseases as shall be directed by the State Board of Health, shall be liable, upon conviction in any court having competent jurisdiction, to be fined in a sum not less than twenty-five (25) dollars, or more than one hundred (100) dollars, and shall become disqualified from holding the office of a member of the Board of Health.

Sec. 11. When any Local Board of Health are of the opinion that the cleansing and disinfection of any house, building, car, vessel or vehicle, or any part thereof, and of any articles therein likely to retain infection, would tend to prevent or check infectious diseases, it shall be the duty of such authority to give notice in writing to the owner or occupier of such house, vessel or vehicle, or part thereof, requiring him to cleanse and disinfect such house, vessel or vehicle and the said articles within a time specified in said notice. If the person to whom notice is so given fails to comply therewith, he shall be liable to a fine of not less than twenty-five (25) dollars nor more than one hundred (100) dollars for every day during which he continues to make default, and said Board shall cause such house, vessel or vehicle and articles to be cleansed and disinfected, and may recover the expenses incurred and said fine and costs of prosecution in a civil action before any justice of the peace or court having jurisdiction in like cases, which sum when recovered shall be placed to the credit of a special fund for the purpose of said Local Board of Health (to be used) by said Board for general expenses. Provided,

that where the owner or occupier of any such house, vessel or vehicle is from poverty or otherwise unable in the opinion of said Local Board effectually to carry out the requirements of said Board in said notice, such

authority may, without enforcing such requirements on such owner or occupier, with his consent, cleanse and disinfect such premises and articles and defray the expenses thereof.

Sec. 12. Any Local Board may direct the destruction of any bed or bedding, clothing, carpets or other articles which have been exposed to infection from contact with infected persons or articles, and may allow compensation for the same, or may provide a proper place, with all necessary apparatus and attendance for the disinfection of such articles and may cause any articles brought for disinfection to be disinfected thereby, and said Board may provide and maintain when necessary, a carriage or carriages suitable for the conveyance of such articles or of persons suffering under any infectious disorder, and may pay the expense of conveying therein any person so suffering to a hospital or other place of destination.

Sec. 13. Where any suitable hospital or place for the reception of the sick is provided within the district of any Local Board, or within a convenient distance of such district, any person who is suffering from any dangerous infectious disorder and is without proper lodging or accommodation, or lodged in a room occupied by more than one (1) family, or is on board any vessel, cars or other vehicle, may, on a certificate signed by a qualified practitioner or the executive officer of said Board, and with the consent of the superintending body of such hospital or place, be removed by order of any justice to such hospital or place at the cost of the local district; and with the like consent and on a like certificate, be so removed by order of the Local Board. An order under this section may be addressed to such constable or officer as the justice or local authority making the same may think expedient, and any person who willfully disobeys or obstructs the execution of said order shall be liable to a fine not exceeding fifty dollars (\$50), to be recovered on criminal complaint, and the sum so recovered shall be paid to said Board for general expenses thereof.

Sec. 14. The State Board of Health may, by order, require any two (2) or more Local Boards to act together for the purposes of the provisions of this act, for the prevention of epidemic diseases.

Sec. 15. When any person coming from abroad, or residing in any town, village, borough or city within this state, is infected, or lately has been infected, with smallpox or other contagious diseases dangerous to the public health, the Board of Health of the town, village, borough or city where such sick or infected person is, may immediately cause such person to be removed to a separate house, if it can be done without danger to his health, and shall provide for such person or persons, nurses, medical attendance and other necessities, which shall be a charge in favor of such town, village, borough or city upon the person so provided for, his parents, guardian or master, if able; otherwise upon the county in which he has a legal settlement, or upon the state if such person be a non-resident of the state, and has no property within the state, in which latter case the bills for such expenses shall be paid only after being audited and approved by the State Board of Health and by the Governor, and said bill shall be allowed only on condition that the Local Board of Health shall have promptly, on the appearance of such disease, notified the State Board of Health thereof, and shall have followed the instructions and regulations of said State Board given with respect to the care and expense in the case or cases in reference to which said bills were incurred, and further shall file satisfactory evidence to said State Board that such person or persons were non-residents of the state and have no property within the same. The town, village, borough or city, as the case may be, may recover in a civil action against the person or persons, or the county chargeable under this section.

Sec. 16. If such infected person cannot be removed without danger to his health, the Board of Health shall make provisions as directed in the preceding section for such person in the house where he may be and in such case they may cause the persons in the neighborhood to be removed, and may take such other measures as they may deem necessary for the safety of the inhabitants.

Sec. 17. When a disease dangerous to the public health breaks out, the board shall immediately provide such hospital or place of reception for the sick and infected as is judged best for their accommodation, and the safety of the inhabitants, which shall be subject to the regulations of the Board; and the Board may cause any sick and infected persons to be removed thereto, unless his condition will not admit of such removal without danger to his health, in which case the house or place where he remains, shall be considered as a hospital and with all its inmates, subject to the regulations of the Board.

Sec. 18. It shall be the duty of all Local Boards of Health, whenever they are informed that there is a case of small-pox, diphtheria or other infectious or contagious disease within the territory over which it has jurisdiction, to immediately examine into the facts of the case, and if the disease appears to be of the character above specified, they shall adopt such quarantine and sanitary measures as may in their judgment tend to prevent the spread of said disease in its locality, subject to be modified by the State Board of Health, and shall immediately notify the Secretary of said State Board of the appearance of such disease and the measures adopted by said Local Board in relation thereto.

Sec. 19. And said Boards of Health shall have power to forbid, by notices posted upon the entrances to premises where there may be a patient sick with such disease, any person, except the medical attendants and spiritual advisers, from going to or leaving said premises without their permission, or carrying or causing to be carried, any material whereby said disease may be conveyed, until after said disease has abated and the premises, dwelling and clothing have been rendered free from disease by such disinfecting means as the Board may direct; and if said Board shall be informed that the above, or any reasonable or sanitary measures which they have adopted and made public, is or has been violated, then the said Board may cause said offender against this act to be apprehended and brought before an officer having jurisdiction; and said offender shall, upon conviction, be liable to a fine in the sum of not less than five dollars (\$5) nor more than twenty-five dollars (\$25) for any violation under this act. Any member of any Board of Health who shall neglect his duties under the provisions of this act shall be liable, upon conviction in a court having competent jurisdiction, to be fined in a sum not less than twenty-five dollars (\$25) nor more than one hundred dollars (\$100) for the first offense; and for conviction for violation of this act the second time, shall, in addition to the fines already provided, become disqualified from holding the office of or to which is attached the duties of a member of a Board of Health.

Sec. 20. All fines collected under this act shall be placed to the credit of a special fund of the city, village or town in which the offense is committed for the use and expense of said Board. That every physician shall report to the Local Board of Health, in writing, every person having a contagious disease, and the state of his or her disease, and his or her place of dwelling, and name, if known, which such physician has prescribed for or attended for the first time since having a contagious disease, or since the discovery of the same to be contagious, during any part of the preceding twenty-four (24) hours; but not more than two (2) reports shall be required in one (1) week concerning

the same person; but every attending physician thereat must see that such report is or has been made by some attending physician.

Sec. 21. That it shall be the duty of each any every practicing physician in this state to report in writing to the Local Board of Health the death of any of his patients who have died of contagious or infectious disease, within twenty-four (24) hours thereafter, and to state in such report the specified (specified) name and type of such disease.

Sec. 22. That every keeper of any private house, boarding-house or lodging-house, and every inn keeper and hotel keeper shall, within twenty-four (24) hours, report in writing to the Local Board of Health the same particulars required of any physician in the preceding section concerning any person being at any of the aforesaid houses and hotels, and attacked with any contagious disease dangerous to the public health.

Sec. 23. That it shall be the duty of every person knowing of any person sick of any contagious disease dangerous to the public health, and the duty of every physician hearing of any such sick person, who he shall have reason to think requires the attention of the Local Board, to at once report the facts to the Board in regard to the disease, condition and dwelling place or position of such sick person.

Sec. 24. That no person shall within the limits of any town, city or village within this state, without a permit from the Local or State Board of Health, carry or remove from one (1) building to another, or from a vessel to the shore, or any railway cars, any person sick of any contagious disease, or the body of any person having died of contagious disease; nor shall any person, by any exposure of any individual sick of any contagious disease, or of the body of such person, or by any negligent act connected therewith, or in respect to the care and custody thereof, or by a needless exposure of himself, cause, or contribute to or promote, the spread of disease from any such person or from any dead body.

Sec. 25. That every person being the parent or guardian, or having the care, custody or control, of any minor or other person, shall, to the extent of any means, power or authority of said parent, guardian or other person, that could properly be used or exerted for such purpose, cause and procure such minor or person under control to be so promptly, frequently and effectively vaccinated that such minor or individual should not take, or be liable to take, the small-pox.

Sec. 26. That no principal, superintendent or teacher of any school, and no parent, master or guardian of any child or minor, having the power and authority to prevent, shall permit any child or minor, having scarlet fever, diphtheria, small-pox, or any dangerous, infectious or contagious disease, or any child residing in any house in which any such disease exists, or has resided, to attend any public or private school until the Board of Health of the town, village, borough or city shall have given its permission therefor; nor in any manner to be unnecessarily exposed, or to needlessly expose any other person to the taking or to the infection of any contagious disease.

Sec. 27. That no person shall allow to be retained unburied the dead body of any human being for a longer time than four (4) days, or where death has been caused by a contagious disease, for a longer time than twenty-four (24) hours after the death of such person, without a permit from the Local Board of Health, which permit shall specify the length of time during which such body may be retained unburied; and when death has been caused by a contagious disease the body shall, if directed by said Board, be immediately disinfected in such a manner as may be directed by said Board, and inclosed in a tightly sealed coffin, which shall not thereafter be opened, and the funeral of such person shall be strictly private, and in the re-

moval thereof for burial or otherwise, hearses or such other vehicles as may be authorized by said Board only shall be employed.

Sec. 28. Said Boards of Health may employ all such persons as shall be necessary to carry into effect the provisions of this act and the regulations duly established by said Boards as herein provided, and may fix their compensation. The said Boards shall have power to employ physicians and provide necessaries for persons in cases of poverty, and generally to pay such expenses as are necessarily incurred by them in taking precautions which they may deem necessary to the public health.

Sec. 29. It shall be the duty of the chairman of any town, village or city board of health which has incurred expenses for the control of infectious or contagious diseases in any such town, village or city, to file an itemized statement thereof, duly verified, under oath, with the clerk or recorder of such town, village or city, and thereupon it shall be the duty of the town supervisors, or the council of any city or village, to audit and pay the said statement, or so much thereof as they deem just and proper, in the same manner as other accounts against such town, village or city are audited and paid. For the purpose of carrying out the provisions of this act, towns, villages and cities are authorized to levy in addition to all taxes now authorized by law a tax not to exceed one (1) mill on the dollar of taxable property in any one year. Provided, however, that this act shall not apply to any city where provision is now made by law for the payment of such expenses by said city.

Approved April 26, 1895.

Sec. 30. Any person who shall wilfully violate any of the provisions of this act, or of any regulations duly made and published by any of the Boards of Health herein mentioned—the penalty for which is not herein specifically provided for—shall be guilty of a misdemeanor; and upon conviction thereof, shall be subject to a fine not to exceed one hundred (100) dollars, or imprisonment not to exceed thirty (30) days, or both such fine and imprisonment. All amounts so collected shall be paid to the town, village or city treasurer and placed to the credit of a special fund for the purposes and expenses of said Local Board of Health.

Sec. 31. This act shall take effect and be in force from and after its passage; and all acts and parts of acts inconsistent with this act are hereby repealed.

Approved March 3, 1883.

## REPORTS OF SOCIETIES.

### Minnesota Academy of Medicine.

R. O. BEARD, M. D., Secretary.

Stated meeting, Wednesday evening, January 4, 1899, at the West Hotel, Minneapolis; the President, Dr. C. G. Weston, in the chair.

Dr. A. W. Abbott, of Minneapolis, exhibited a new rectal speculum, devised by himself, upon the principle of the Sim's vaginal speculum. (See *Lancet* of Feb. 1).

A paper was presented by Dr. J. E. Moore, of Minneapolis, upon

### CHOLECYSTITIS.

The following is an abstract of the paper:

The intent of this paper is to call the attention of the profession to the fact that cases of inflammation of the gall bladder are much more

frequent than is generally understood, and that many cases are doubtless overlooked.

Mayo Robson's point should be as familiar as McBurney's point. Gall stones are known to sometimes cause cholecystitis, but special attention is called to cases independent of gall stones. The whole number of cases of inflammation in this region is not so great as in the lower abdomen, but many cases of "pleurisy," or "cramps in the stomach" are doubtless cases of cholecystitis.

The cause of cholecystitis is infection, which usually takes place through the bile ducts or the blood. The bile ducts are frequently found free from infection when the gall bladder is inflamed. The colon bacillus is found in most cases, but sometimes the other pyogenic germs are found. Cholecystitis occurs as a complication of typhoid, pneumonia and all acute infectious diseases. A pain located in the gall bladder region, during the course of any of these diseases, should lead to a careful examination. This is especially true in typhoid. A distended gall bladder, like a distended urinary bladder, is very liable to infection. Gall stones rarely cause cholecystitis unless they become impacted and cause distention. Inflammation of the gall bladder is frequently the pathological condition found in an acute attack of pain from malignant disease in the upper abdomen, coming on secondarily to distention from obstruction.

The symptoms in a well marked case of cholecystitis are those of an acute inflammation in the right hypochondriac region, but many cases are not well defined and may be very readily overlooked. A chill, followed by a rise in temperature, pain, tenderness and a tumor in the right hypochondriac region would point to cholecystitis. It is most likely to be pronounced appendicitis and may be mistaken for acute obstruction of the bowels. It is very commonly pronounced peritonitis. A diagnosis of peritonitis should never be accepted in any part of the abdomen, because in the vast majority of cases it is secondary to some local disease. A white blood count will be helpful in diagnosis, leucocytosis indicating the presence of pus.

The differential diagnosis between cholecystitis and pyelitis can scarcely be made from the local symptoms, but a careful urinalysis should settle the question. This is a grave disease and has a surgical aspect. Death is due to rupture, sepsis and gangrene. In all but very mild cases the only treatment worthy of consideration is free drainage. The operation is safe and very satisfactory.

When in doubt as to whether a given case is one of appendicitis or cholecystitis, explore for appendicitis first because it is more frequent. Should farther exploration be necessary, a sec-

ond opening in the gall bladder region is preferable to one long incision.

Dr. J. H. Dunn, of Minneapolis, opened the discussion. He had been surprised, he said, at the frequency of the confusion of cholecystitis with appendicitis. He should have thought it would be more readily confounded with suppurative disease of the kidney, movable kidney, etc. He recited three illustrative cases. Dr. A. W. Abbot said that the Academy was indebted to Dr. Moore for taking it away from appendicitis. He should like to hear from Dr. Moore upon the question of the removal of the gall bladder versus drainage. The paper referred to suturing the gall bladder to the fascia rather than to the peritoneum. He would ask the reason for the preference. Touching the point of occlusion of the bile ducts, he said that he had experienced great difficulty in passing a sound from the gall bladder down through the common duct. There always appeared to be a fold of mucous membrane, possibly in the nature of a valve, which hindered its passage. It was always easier to pass it the other way. Failure to explore downwards, then, should not be taken as evidence of obstruction, or occlusion.

Dr. J. L. Rothrock, of St. Paul, offered a word in regard to the pathology of the gall bladder. It had been, he said, his good fortune to study under Chiari while he was preparing a paper upon this subject for the International Congress. He had then reported twenty-three cases of typhoid infection of the gall bladder. Indeed, in a great many cases of cholecystitis, colonies of the typhoid bacillus were to be found. He believed that infection traveled up from the duodenum. Probably all infections of the gall bladder take this course. In case of catarrhal inflammation the disease doubtless originates in this way. Not all cases of cholecystitis are complicated with gall stones. Stones may be predisposing factors in infection, but the infective germs undoubtedly travel up the ducts.

Dr. F. A. Dunsmoor, of Minneapolis, related a case of so-called empyema of the gall bladder, following typhoid fever. He had seen a case this past winter associated with hepatic abscess, which illustrated the relation of this condition to pain experienced in the right shoulder. In the matter of incision, he gave the preference to section of the oblique rather than of the rectus muscle. In about half the cases he had operated upon he had discovered stones in the gall bladder.

Dr. J. Clark Stewart, of Minneapolis, referred to one or two points in the case of his which Dr. Moore had reported. The difficulty in differentiating between empyema of the gall bladder and hepatic enlargement depended upon the fact that the area of dullness lay along the border of the liver. Autopsies had shown very often marked

distention of the gall bladder, without occlusion of the ducts by stones, the gravid gall bladder perhaps pressing upon the cystic duct and itself occluding it.

Dr. Moore closed the discussion. He agreed with Dr. Dunn that in the majority of cases gall stones were present; but one of the objects of his paper had been to show that they were not always there. Replying to Dr. Abbott's question, he said that cholecystectomy was a more dangerous operation than cholecystotomy. Moreover, the gall bladder has more functional importance than the appendix and should be conserved. He regarded the fascia as a safer point of attachment for the walls of the gall bladder than the peritoneum. Referring to Dr. Rothrock's argument that infection of the gall bladder occurred through the ducts from the bowel, he said that it had been shown that perhaps the readiest way to produce disease of the gall bladder was to ligate the common duct, an observation which would tend to disprove the point. Moreover, it was certainly true that in many cases of cholecystitis, no disease of the intestinal tract was present.

## BOOK NOTICES.

The Sexual Instinct. By James Foster Scott, B. A. (Yale), M. D., C. M. (Edinburgh), Late Obstetrician to Columbia Hospital for Women, and Lying-in Asylum, Washington, D. C.; etc. New York. E. B. Treat. 1899. [Price, \$2.00].

The author is to be commended for his success in handling this somewhat delicate subject without saying anything that should stimulate prurient tastes. He deals not only with the healthy and unhealthy sexual instinct, but also with many other topics germane to this subject, such as the regulation of prostitution, criminal abortion, the various forms of venereal disease, onanism and sexual perversion.

On the Phonendoscope. By Felix Regnault, M. D., and M. Anastasiades, M. D. Illustrated, Philadelphia. George P. Piling and Son. 1898. [Price, 50 cents].

The phonendoscope is described as "about the size of a large watch, and consisting of a metallic box with two vibrating plates, by means of which the instrument is placed upon the body to be examined, two gum tubes serve as conductors of the sound from the body to the ears." Those who seek a fuller explanation of the mechanism and application of this instrument will find it all set forth in the book described above.

The Medical News Pocket Formulary for 1899, by E. Quimm Thornton, M. D., Demonstrator of Therapeutics, Pharmacy, and Materia Medica in the Jefferson Medical College, Phila-

delphia, Phila. and New York. Lea Brothers & Co., 1899. [Price, \$1.50, net].

This is a very useful book for the practitioner to carry about with him and the recent graduate will find it especially convenient. It contains a large number of carefully selected prescriptions covering all the common diseases in every stage, the whole bound in a soft cover with flap, pencil and pocket similar to a visiting-list.

Saunders' Pocket Medical Formulary. By William M. Powell, M. D., Author of "Essentials of the Diseases of Children," etc. Fifth Edition, thoroughly revised. Philadelphia. W. B. Saunders. 1899. [Price, \$1.75, net].

In addition to a large and well selected list of formulæ this book contains as adjuncts a posological table, formulæ and doses for hypodermic medication, the diameters of the pelvis and of the fetal head, an obstetrical table, a diet list, a list of materials and drugs for anti-septic surgery, the treatment for asphyxia from drowning, surgical remembrancer, etc. It is also interleaved and furnished with a thumb index.

## FEBRUARY MAGAZINES.

Harper's for February, particularly in its leading articles, shows that a monthly magazine, with such unlimited resources as this one possesses, may handle the questions of the day with a freshness and an interest not permitted the daily or the weekly when in their competition with one another they feel it necessary to treat fully every incident the day or the week after its occurrence. For instance in this issue Senator Lodge begins a series of articles on the Spanish-American war, and it is safe to say nothing has yet been published to equal them in freshness, in interest, or in value. Likewise, Mr. Joseph L. Stickney, in "With Dewey at Manila," finds his best opportunity to handle the subject in a manner befitting its importance, and although he has written many dispatches about the battle, this is his first serious review of it.

"Anglo-Saxon Affinities," by Julian Ralph, and "The United States as a World Power," by Professor Albert Bushnell Hart, are two other very valuable contributions to war history. Dr. John A. Wyeth contributes an article on Lieut. Colonel Forrest at Fort Donelson, showing that had such a commander been in charge the men in that fort would not have been taken prisoners by Grant. This is an exceedingly interesting article, and Dr. Wyeth's conclusion is partially confirmed by Gen. Grant himself in his memoirs, although Dr. Wyeth makes no reference to this fact. The number is an excellent one.

Lippincott's has found for itself a unique place in magazine literature, by giving in each



number a complete novel, which never falls below the best standard of short story telling. Beside this novelette, the table of contents compares favorably with that of any magazine published in this country. For instance, in the February issue is an admirable article on Lincoln, in fact, one of the very best of recent contributions to this subject. The one on Cyrano de Bergerac is but timely and excellent, as is also Austin Bierbower's "A Diplomatic Forecast."

This magazine deserves very high praise for the stand of excellence it has so long maintained.

The Living Age is a weekly that once in the home of a reading man remains in that home.

A glance at one or two issues will show why this statement is true.

The number for January 7 contains, among other things, a pungent and wholesome lecture on Art and Morality, by M. Ferdinand Brunetiere, translated for the magazine; the first instalment of The Etchingham Letters, which are attracting wide notice in The Cornhill by their cleverness; and the beginning of a short serial. The number for January 14, gives the full text of Lord Rosebery's recent address on Literary Statesmen, which has been the subject of general comment; an article from Blackwood's on The Ethics of Conquest, which relates to the Philippines; and a bright paper on The Madness of Mr. Kipling; the number for Feb. 4, contains a masterful essay on Dickens by Andrew Lang; one on Francis Joseph, of Austria, by a Diplomat, and other leading articles from the European magazines, besides a monthly supplement of Readings from New Books.

The Youth's Companion occupies a unique field in the world's literature; it is a child's paper that people of all ages read and enjoy. It has been published seventy-two years, and, like the coral reef, it has grown a little nearer perfection each year. Wherever there is a home, with young people in it, into which the Companion does not go, there is a home short of one of the agencies that make for good—a home that deserves one's pity, for its poverty, if it cannot afford to take so cheap a journal; for the ignorance of its head, if this be the reason why such a journal is not taken. The Youth's Companion is edited with great ability, not by one man, but by a corps of men. Its contributors are found in all parts of the world, and in all spheres of activity. It is a journal that is a credit to America, and no other country has ever produced anything to be compared with it. Its price is \$1.75 a year, and it is published at Boston.

The Review of Reviews gives its usual amount of space to topics of current interest. Its leading articles are "Aguinaldo: A Character

Sketch;" "Reconstructing the Philippines;" "The Character of the Cubans;" "Java as an Example—How the Dutch Manage Tropical Islands;" "The Modern Growth of Colonies and Protectorates," etc. Such articles show how valuable this review has become to the busy man who wishes to keep in touch with the topics of the day.

## NOTES.

### THE PRACTICAL TREATMENT OF SCALDS AND BURNS.

N. David Chapman, B. S., M. D., of Syracuse, N. Y., after detailing four cases of more or less severe burns in which he derived great help from the use of Unguentine, which was alternated and compared with the usual oily applications, reached the following conclusions regarding this valuable preparation: A—Easy to apply. B—Great relief to patient, it acting as a sedative, cooling and non-irritating. C—It does not dry out so quickly, and consequently the dressings do not have to be changed so often. D—Rapid cicatrizant. E—When used prevents granulation tissues. F—It is non-toxic. G—Patients recover more quickly under the Unguentine treatment than any other. H—Prevents the necessity of skin grafting in a good many cases by hastening the reparative processes. I—It is much more convenient, neat and practicable.—Abstract from article in New York Medical Journal.

### TREATMENT OF COUGH IN THE PHTHISICAL.

Among the most prominent symptoms in phthisical cases is the irritating, harrassing cough which is not only extremely annoying, but, if unrelieved, contributes greatly to the loss of flesh and strength by robbing the patient of his night's rest. While the remedies that have been recommended from time to time, are almost innumerable, the physician has usually been compelled in the end to fall back upon opium and some of its derivatives. Most of these drugs, however, have the injurious property of weakening the respiratory apparatus, of diminishing the expectorating power, and of giving rise to disagreeable after-effects. These objectionable features are entirely absent in Heroin, a new remedy which combines the sedative action of morphine and codeine with perfect freedom from injurious or unpleasant after-effects. Heroin exerts a specific influence upon the respiratory tract, increasing the volume of inspiration as well as the force of expiration, and reducing the frequency of respirations. It thus acts as a true respiratory sedative, and relieves cough without the least risk of stagnation of the secretions in the air passages. In tuberculous cases it has the additional effect of reducing the temperature and relieving night sweats.

## CATHETERS AND CYSTITIS.

By R. N. MAYFIELD, M. D.,  
New York.

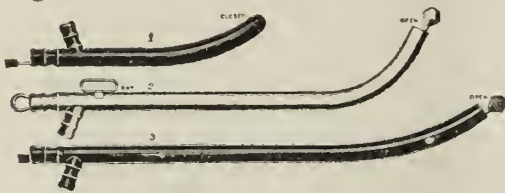
Formerly President of the Colorado State Board of Medical Examiners and Lecturer in Pathology and Clinical Medicine, University of Colorado, etc.

It is well known that when it is necessary to use a catheter of usual construction—that is, with the ordinary fine perforations as an inlet thereunto—it does not work readily or satisfactorily, or subserve fully the results expected from it.

Examples of such unsatisfactory operations are seen where there is a good deal of mucus present in the bladder, such mucus being apt to surround or lie upon the end of the catheter, clogging or stopping the apertures thereof and preventing the ingress of fluids to be drawn off; again, when sediment or calcareous matter is present, it clogs, even sometimes filling in part or completely the apertures, with consequent failure of the catheter to fully perform its functions. Such failures are especially apt to happen in nearly, if not quite, all forms of chronic diseases of the bladder, and notably so in cystitis.

My object, therefore, is to present a catheter that is reliable and efficient in operation when the use of a catheter is indicated in all conditions and diseases of the bladder. In this instrument the danger of clogging or failure to perform its functions is obviated, and its interior may be readily made aseptic, and bits of mucus that usually clog an ordinary catheter may be readily drawn off.

This catheter is of very simple construction, being tubular, with the curve of an ordinary instrument, and opened at the end for an inlet. For the closure of this open end, and for the easy insertion of the catheter, as well as for other purpose, a bulbous or rounded head is used, preferably solid, and attached to one end of a wire, passing through the body or tube and projecting at its rear or outlet end.



This construction forms a very efficient catheter having an area of opening so large as to greatly obviate the danger of clogging, for, if mucus should lodge against the open end, the workings of the head back and forth upon its seat would cut away the obstructing bits of mucus and permit them to pass through the tube.

With this instrument there should be no hesitancy in using nitrate of silver, iodine, corrosive

sublimite, carbolic acid, or hydrogen solutions in the bladder, as any of these solutions can be readily drawn off or neutralized, thus preventing rupture from gases that form in the bladder.

Regarding the treatment of cystitis with the employment of this catheter, presuming that we have a typical case, with ropy, viscid, and tenacious mucus, the membrane thickened and possibly ulcerated, and in deep folds—"ribbed," as it were—we begin the treatment as follows:

1. Inject a quarter of a grain of cocaine dissolved in a drachm of water into the membranous portion of the urethra.

2. Anoint the largest hard-rubber catheter that can be well passed into the bladder, and increase the size one number each week until the urethra is normal in size.

3. Begin with dilute hydrogen solutions—preferably hydrozone—one part to twenty of lukewarm water, using this solution freely, especially when employing the large size catheter. If the small size is used at the beginning, I recommend the use of only two or three ounces at a time until removed by the return flow. This can be repeated until the return flow is clear and not "foaming," which indicates that the bladder is aseptic.

4. Partly fill the bladder with the following solution: tincture of iodine compound, two drachms; chlorate of potassium, half a drachm; chloride of sodium, two drachms; warm water, eight ounces. Let it remain a minute or so and then remove. This treatment should be used once or twice a day.

Where I suspect extensive ulceration I recommend once a week the use of from ten to twenty grains of nitrate of silver to the ounce, and neutralize with chloride-of-sodium solutions.

This treatment carried out carefully will be satisfactory, as there is no remedy that will destroy bacteria, fetid mucus, or sacculated calcareous deposits like hydrozone.

## GRATEFUL TESTIMONY.

The Imperial Granum Co.,  
New Haven, Conn.

Dear Sirs—I feel assured you have the best food preparation on the market. I had a son—a soldier—come home low with typhoid fever. I used the Imperial Granum and it acted like a charm. He is now well.

It allays inflammation, reduces fever, quiets the patient and is a great blessing. I wish you a happy Christmas.

\_\_\_\_\_, M. D.  
Newport, Dec. 16, 1898.

## ORIGINAL ARTICLES.

## ECTOPIC GESTATION.\*

BY C. A. STEWART, M. D.,

Duluth, Minn.

In the human female there is a section of the genital tract which begins at the uterine cavity and terminates at the abdominal ostium; in form it is a narrow tube and its function is to receive the ovum after it has matured and been thrown off from the ovary and to conduct it to the uterus.

These tubes are, to apply proper terminology, the oviducts, though they are commonly called the Fallopian tubes, in honor of the anatomist who first gave a detailed description of them. Anatomically they consist of three layers or coats, an external serous coat which is continuous with and is really a reflection of the peritoneum, a middle muscular coat and an inner coating of mucous membrane which is lined with ciliated epithelium.

The anatomical structure is very similar to that of the intestine, with which it possesses another feature in common—that of peristaltic contraction, which occurs normally from the abdominal end toward the uterus. The outer coating of the tube is formed by the lateral extension of the peritoneal covering of the uterus which makes up the broad ligament and which also includes within the folds the ovary and parovarium, the tube occupying the upper free border of the broad ligament.

I regard the tubes as having but one function, that of oviducts, in spite of a widely accepted theory that in addition to this function they are the normal meeting place of the ovum with the spermatozoa, and consequently that they are the seat of normal impregnation. This theory, it seems, was arrived at by observation upon the lower animals in which impregnation took place in the cornua of bipartite uteri, and the cornua were mistaken for oviducts; the observer evidently overlooking the fact that these tubes are properly developed only in the higher order of animals who have assumed the upright position. I shall then, consider the uterus to be the seat of normal conception and that when fertilization of the ovum occurs elsewhere that it is an abnormal occurrence resulting from inflammatory or other changes in the tube or the tissues immediately surrounding it, which are sufficient in extent to interfere with the perform-

ance of its peculiar function of conducting the ovum to the uterus, which it accomplishes by peristalsis aided by the movements of the ciliated epithelium with which it is lined.

This function being impaired or suspended, the ovum passes slowly through or is arrested in some part of its course, or as sometimes happens, it becomes lodged in a diverticulum of the tube, and the spermatozoa which are endowed with the power of independent locomotion, find their way to it and impregnation results, immediately followed by fixation of the ovum and its development.

It is more in accord with general physiological principles that the ovum should reach the place of its future development before it becomes impregnated, and by accepting the theory that the uterus is the seat of normal uterine conception we secure a definite basis for a simple yet comprehensive theory of the laws governing fecundation and gestation both normal and abnormal. I have spent considerable time in looking up the available authorities upon this subject and have decided in favor of the uterine theory of normal conception because the structure, size and movements of the tubes with their open mouths and trumpet-shaped fimbriated extremities lying in close juxtaposition to the ovaries, to which they are in fact attached by the tubo-ovarian ligament, all indicate their function to be transmitters of the ovum, while there is nothing in their size or structure, in the systematic peristaltic contraction or in the impulse imparted to their contents by the ciliated epithelium to invite their invasion by spermatozoa under normal conditions.

The uterus, on the other hand, with its alkaline secretion, its lining membrane arranged in crypts and folds and the cervical canal filled with the thick, tenacious secretion of the utricular glands, seems fitted especially to arrest the ovum in its course and provide it with a suitable resting place until it becomes fertilized and forms permanent uterine attachments, or loses its vitality and is cast off with other excretory products. The whole tendency of the uterus is to retain its contents, while the function of the tubes is in the way of propulsion rather than retention. The same influences which assist the ovum onward, the movement of the ciliated epithelium and the tubal peristalsis serve under normal conditions to arrest, or at least, to greatly retard the admission of the spermatozoa to the tubal cavity; a wise provision, as otherwise many more ova would be vivified within the tube, and immediately commencing to augment in size would find the calibre of the tube too small for passage

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and fixation of the ovum to the mucous lining of the tube would follow. Advocates of the theory of normal tubal fecundation of the ovum relate instances in which spermatozoa have been found in the tubes and even upon the surface of the ovary, but as the spermatozoon is a microscopic object they were presumably discovered in the examination of morbid tubes which had been removed, and it is certainly more logical to conclude that the spermatozoa were there as a result of the pathological condition rather than as normal habitués of the tube.

We see in every department of nature's works a tendency to pursue the course most likely to insure perfect results and guard against possible accident, and I cannot make it seem at all consistent with the established order that a function so important as is the reproduction of the species should have as one of its constant factors a condition so likely to eventuate fatally to both mother and child as tubal impregnation of the ovum; more especially when we remember that the danger of accident is overcome so easily, safely and withal so thoroughly in consonance with natural phenomena by adopting the simple theory of allowing the ovum to traverse the tube and enter the uterine cavity before meeting the male element.

By far a greater number of ova perish before impregnation occurs than ever become fertilized; these pass through the tube and into the uterus, where they remain for an indefinite time before they lose their vitality and are thrown off; then why not regard it as the invariable habit of the ovum and look upon normal impregnation as a uterine occurrence subsequent to the tubal transit.

To me this is the rational theory of normal impregnation, and I shall so consider it, regarding tubal impregnation as a result of tubal disease, either functional or structural, which retards or obstructs the ovum in its passage to the uterus. Further, I believe that all cases of ectopic gestation, with the possible exception of the extremely rare and poorly authenticated cases of ovarian pregnancy, can by careful scrutiny be shown to be tubal in their inception.

Little that is definite is known of the precise conditions of the tube which permit these abnormal occurrences, but it is probable that they are two-fold in character; those which obstruct or retard the ovum in its passage and the other the abolition or modification of the conditions which prevent tubal invasion by the spermatozoa, and that they consist primarily of structural changes in the mucous membrane, due to inflammatory action by which the ciliated movement of the lining epithelium is impaired or destroyed. Extension of the same inflammatory condition to the deeper layer of the tube is liable to im-

pair its contractile power and as a result tubal peristalsis is suspended.

There is one clinical fact which tends strongly to confirm the theory that tubal conception is a consequence of tubal disease, and that is that the great majority of cases in which it occurs have either never experienced normal pregnancy or have seen a comparatively long time elapse since their last conception. One of my own cases gave a history of the lapse of thirteen years since her last pregnancy; another had been married nine years and never before been pregnant.

Many cases give a history of an attack of metritis or salpingitis often following labor or abortion and therefore septic in character. Other cases may follow the changes which result from an attack of gonorrhœal salpingitis, as either of these exciting causes is sufficient to produce permanent structural change not only in the mucous lining, but in the deeper layers of the tube which would be likely to impair its peristaltic action; and as I have already stated that these conditions not only tend to retard the progress of the ovum through the tube, but to invite its invasion by the spermatozoa, we see how it is that fertilization of the ovum occurs in this unusual and dangerous location.

When impregnation takes place it is likely that fixation of the ovum to the nearest maternal structure occurs very promptly; as the fertilized ovum begins its growth at once its augmented size would render its passage through the tube still more difficult and slow than it was previous to fertilization, and with fixation of the ovum to the walls of the oviduct tubal pregnancy is accomplished.

This theory of the pathology of ectopic gestation will include every demonstrated variety of the condition, even those cases where the ovum is supposed to be fertilized in its vesicle before leaving the ovary; this variety has never been satisfactorily demonstrated, and if it ever occurs it is so extremely rare that it may be omitted from consideration.

In discussing the pathological features it is customary to divide them into three classes, corresponding to the three divisions of the tube in which the ovum may become arrested: First, those lodging in the ampulla of the tube or the portion which projects beyond the folds of the broad ligament, these include by far the greater number; second, the isthmal variety, occurring in that portion of the tube between the ampulla and the uterus; and third, the tubo-uterine or interstitial form where the ovum has reached the portion of the tube which is surrounded by uterine tissue before it becomes arrested. It is supposed that the ovum in some of these cases finds its way into the uterine cavity and is expelled as is an ordinary abortion; if it does not, rupture is very certain to occur at some time be-

tween the second and tenth week, by far the greater number occurring from the seventh to the ninth week. In this portion of the tube rupture may occur into the cavity of the peritoneum, and be attended by great hemorrhage. Ordinarily the hemorrhage is more severe when the gestation has advanced to the ninth or tenth week than when it occurs earlier, as the placental vessels are more developed and their rupture which attends detachment or partial detachment of the placenta permits of more free hemorrhage. When fixation has occurred in the isthmal portion of the tube rupture is very certain to occur at some time between the second and the tenth week. It is in this division of the tube also that intraperitoneal rupture may occur and the extravasation take place between the folds of the broad ligament, when, if the fœtus survive, the separated layers of the meso-salpinx continue to form a sac or envelop for the embryo, and its development goes on until the distended peritoneal sac gives away with a new extravasation into the abdominal cavity, an occurrence which is termed secondary rupture, or if this does not occur fœtal development may go on to term, the peritoneum being gradually detached from the adjacent organs and then from the anterior abdominal wall sufficient to provide a sac for the embryo. When at full term it is not relieved by operation, the fœtus dies and suppuration of the cyst follows with discharge of pus, bones, etc., into the vagina, rectum or bladder, or it becomes converted into a lithopædion. The cases of abdominal pregnancy where the child develops in the abdominal cavity, become so as a result of its survival after a primary rupture of the tube into the folds of the meso-salpinx, and a secondary rupture into the peritoneal cavity.

In many cases, I think a majority of all cases that occur, the ovum becomes attached to the walls of the tube in its outer third, the portion called the ampulla; if it retains its position until the end of the seventh or the eighth week the abdominal ostium becomes occluded. So long as it remains open, however, the ovum is liable to become extruded through it into the abdominal cavity, attended by considerable hemorrhage, but without destroying the integrity of the tube. These occurrences are almost exactly parallel to abortion in the early weeks of uterine pregnancy, and are termed tubal abortion. These cases are the cause of pelvic hæmatocele, which has been ascribed to so many different causes at different times. The ovum being small is often overlooked in the mass of blood; as in uterine abortion the ovum may not be entirely detached at the time of the initial hemorrhage and remaining partially attached the irritation it causes provokes repeated hemorrhages, which may ultimately prove fatal.

Tubal abortion and rupture are the two meth-

ods by which tubal gestation can terminate. Clinically a distinction between them is of no importance; the symptoms and the indications which predispose to rupture of the tube are the gradual thinning of the gestation sac and sud-into the sac. The exciting causes may be external enlargement of the ovum by hemorrhage for treatment being identical, the interest which attaches is purely pathological. The causes ternal violence, as a blow or fall, or it may result from muscular effort. It is probable that most cases of rupture occur from sudden distension of the sac by internal hemorrhage. If the ovum occupies the isthmal portion of the tube there is one influence which is exerted in favor of rupture between the folds of the broad ligament. When the tube begins to enlarge it causes a separation of the layers of the broad ligament, and this separation strips off the peritoneal coating of the tube at this point and renders it to this extent weaker than the opposite side of the tube, and as the walls are thinned in this way it is probable when the rupture occurs that it will take place at this weakest point. The symptoms which would create a presumption of rupture into the folds of the mesosalpyinx are pain with comparatively slight symptoms of shock and a circumscribed swelling low down and confined to the space at one side of the uterus.

If the ovum lodges in the outer portion of the tube and tubal abortion does not occur the rupture is necessarily into the general peritoneal cavity, and the hemorrhage is likely to be very free, as the ovum goes on to about eight weeks of development before the abdominal opening in the tube becomes occluded, and previous to the time that closure occurs the open orifice of the canal affords an easier means of escape to the ovum than does rupture of the tubal walls. Death may ensue in a few hours from hemorrhage, or if it ceases it is only to recur again when the patient rallies from the exhaustion, and this may occur repeatedly until the vital forces are exhausted.

The difference in the amount of bleeding in intraperitoneal and extraperitoneal rupture is that in the latter the effusion is into the circumscribed space afforded by the layers of the broad ligament, the pressure of which retards the bleeding and in this way favors the formation of clots, which by their pressure tend to check the bleeding still more and it finally ceases until secondary rupture occurs; while in intraperitoneal rupture there is no influence which retards the hemorrhage in even the slightest degree.

It follows then that rupture into the folds of the broad ligament is the more fortunate for the patient, especially if death of the ovum occurs at this time, as it will then either undergo conversion into a mole, become gradually absorbed

with the effused blood, or suppuration may occur in the mass with ulceration into the vagina, rectum or bladder.

I have stated that tubal abortion or rupture are the cause of pelvic hæmatocele. I will qualify this by saying they are the demonstrated cause. Bland Sutton states that most obstetricians believe in the occurrence of pelvic hæmatocele from the rupture of tubo-ovarian varices and also from metrorrhagia, but he says further, that he has never found either of these causes, and in fact any cause other than tubal rupture and abortion in any of the dissections he has made.

The symptoms of ectopic pregnancy vary considerably at different periods of its development and they may be divided into three classes: those which are manifest before rupture of the gravid tube or tubal abortion occurs, those which are developed at the time of these occurrences and those which are developed subsequent to rupture, and up to the completion of the term of ordinary gestation. To these may be attached a fourth, consisting of the symptoms which are noted after term.

The early symptoms may be so slight as to escape notice, or they may closely simulate normal pregnancy; thus we may have suppression of menstruation. With this we may find fullness of the breasts; though I believe in the majority of cases the breasts are unchanged. One observer speaks of a case in which there was a secretion of milk in one breast only and that on the same side as the gravid tube. Menstruation is an uncertain factor, being sometimes arrested, but more often occurring irregularly or profusely and so becomes misleading. Pieces of decidual membrane are thrown off during the flow, but are not always noticed by the patient; where they are seen, however, they afford valuable evidence of the existence of this condition. In fact, the early history in these cases is as likely to lead one astray as to prove a help in making a diagnosis. Often there is nothing to lead the patient to believe that there is any abnormal condition, or if she suspects anything wrong she may regard it as an ordinary pregnancy, and she does not consult her physician. Again she seeks advice for some condition which she regards as disease without her having a suspicion of pregnancy. One of my own patients, a young woman about twenty-four years old, three years married, and never pregnant, consulted me on account of a metrorrhagia which had lasted for six weeks, and had been accompanied by some pains in the region of the right ovary and some impairment of her general health, which later was ascribed to the direct effects of the blood loss. I learned by inquiry that three weeks before she came to me there had been an augmented flow at the time she would naturally expect the menses, and with this were a number of membranous pieces,

or as she described them, pieces like "scraps of flesh." A local examination showed the uterus to be slightly enlarged, movable and in normal position, and to the right, occupying all the space between the fundus uteri and the ovary, which could be distinctly felt, was a mass the size of a small orange; she stated that her health had previously been excellent except for some dysmenorrhœa, for which she had never been under treatment.

My diagnosis was probable tubal pregnancy, if not this a small intra-ligamentary cyst, and I advised immediate operation, which was consented to.

The mass was removed unruptured and showed the walls of the tube greatly thinned, the abdominal ostium closed and the sac containing a foetus at about the eighth or ninth week with a considerable number of blood clots and apparently very near rupture.

Since this experience I have seen one case that presented very similar symptoms; metrorrhagia, localized pain in the side, no breast symptoms, uterus in normal position, not very movable, and a mass to the right as large as an orange. She was twenty-eight years old and two and one-half years married without having been pregnant. She thought she had noticed some morning sickness and had felt that something was wrong for ten or eleven weeks. In this case a small intraligamentary cyst was found. Although the diagnosis was not definitely made in either of these cases previous to the developments of the operation, in both of them there was plenty of evidence that one of two abnormal conditions existed, either of which required operation to insure the safety of the patient.

The prominent symptoms of rupture are those of internal hemorrhage. There is sharp, localized pain, a sensation as if something had given pulse, sighing respiration, lowered temperature away, followed by pallor, faintness, frequent and often vomiting. There is sometimes hemorrhage from the vagina with shreds of decidua which give rise to suspicion of early abortion; the great depression of vitality so out of proportion to the visible blood loss will give a clue to the real condition, however, which should lead to examination by the vagina which will show a soft, fluctuating mass in the pelvis posterior to the uterus; and from the acuteness of the attack, the alarming depression of the vital forces and the evidence afforded by vaginal examination the diagnosis of ruptured tubal pregnancy should be made, although death has followed the accident so rapidly in a few cases as to give rise to suspicion of poisoning and only an autopsy could definitely settle the cause of death.

On the other hand there are some few cases which rupture into the peritoneum, probably at an early date with but slight hemorrhage and

no very marked accompanying symptoms. In these cases the small effusion of blood may be promptly absorbed owing to the known ability of the peritoneum to digest and absorb small effusions, and the trouble speedily ends. If it is not disposed of in this way operation at a later time may be necessary to restore the patient to health.

In extraperitoneal rupture the effusion being confined in a narrow space the pressure exerted limits the extent of the bleeding so that while a resemblance exists between the symptoms of this condition and those in intraperitoneal rupture, the smaller hemorrhage makes all the symptoms less severe and the signs of shock are more speedily dissipated. The local condition is a swelling in the broad ligament which generally pushes the uterus over to the opposite side of the pelvis and causes it to appear more or less fixed. Rupture and extravasation into the folds of the meso-salpinx may or may not result in the death of the ovum. If it continues to live it also continues to grow, and, to accommodate its increase in size, the peritoneal covering becomes stretched, attenuated and detached from the adjacent organs, and being tense and weakened it is liable to rupture into the peritoneal cavity at any moment and with varying effects. If this accident should occur in the later months of pregnancy the hemorrhage would be more severe and death more certain and sudden than in placenta prævia. When the sac is torn through in this way it is termed secondary intraperitoneal rupture. If the placenta occupies a position below the fœtus the latter may be extruded into the peritoneal cavity, and if it preserves its viability it may continue its growth until it is fully developed.

It is the occurrence of this phenomenon that created the belief that the ovum may fall into the abdominal cavity, become fertilized and then fixed to some of the abdominal viscera and proceed to full development. Every case of this character when carefully studied will give positive evidence that the seat of development was originally in the Fallopian tube, however, and the point of rupture will be evident upon examination.

If the broad ligament gestation sac opens into any other viscus than the peritoneum it is termed extraperitoneal rupture. This does not occur, however, until death of the fœtus and suppuration of the sac occurs, a condition which has been termed suppurating hæmatocele; when this condition supervenes it is to all intents and purposes an abscess, and like other abscesses, its contents work their way by burrowing and ulceration in the direction of least resistance until they open through the abdominal wall, or into the rectum, bladder or vagina. The contents discharge themselves through the opening made

in this manner and if the cavity can be perfectly drained it may gradually heal.

If the fœtus escape the multitude of dangers which threaten its existence and the ectopic gestation goes on to term the symptoms of labor manifest themselves, and unless the patient be relieved by prompt operation the fœtus dies and may then give rise to various forms of disturbance or it may remain quiescent. The most fortunate termination is absorption of the liquor amnii with subsequent mummification or calcification of the fœtus; or conversion of the soft parts into adipocere. If this takes place it may be carried for years without exciting any disturbance; if it does not occur the fœtus undergoes decomposition and may require removal.

The uncertain character of the early symptoms coupled with the fact that there is tubal disease, either structural or functional, and generally of long standing in the cases in which tubal gestation occurs, and that many of these conditions of disease closely simulate tubal pregnancy not only in the general symptoms to which they give origin, but in local symptoms as well, all combine to make a positive diagnosis anything but easy.

Thus before rupture great difficulty is experienced in differentiating between this condition and hydro- or pyo-salpinx, small ovarian cysts and sometimes pelvic cellulitis; again one of these conditions may exist on one side and tubal pregnancy on the other, or tubal and uterine pregnancy may exist at the same time in the same patient; or there may be a fecundated ovum in each tube at the same time.

At the time of rupture the conditions present may simulate a number of conditions such as intussusception, perforation of the appendix, twisting of the pedicle of an ovarian cyst, etc., although at this time the history that can be learned with the evidence afforded by local examination will generally afford the desired clue. Here, as in every other field of investigation, it is of the greatest advantage in making a diagnosis to have a thorough knowledge of the conditions which are likely to give rise to the symptoms presented. One can then take advantage of the little shadings of difference afforded by the symptoms of different conditions as well of the information afforded by the order in which they occur. For instance, in tubal rupture pain is likely to be an initial symptom, but it is of short duration. In intussusception or twisting of an ovarian pedicle pain would not only be an initial symptom, but it would continue; abdominal tenderness and rigidity are symptoms which would be prominent in either intussusception, perforation of the appendix or twisting of the pedicle of an ovarian cyst, as all these conditions would imply more or less peritoneal inflammation; while on the other hand in ruptured tubal gestation the

abdomen is soft and free from tenderness upon pressure, and too, the quick, soft pulse and sighing respiration show some features different from the small, rapid pulse, anxious, pinched facial expression and clammy perspiration which are the attendants of the nervous shock which accompanies sudden and severe peritoneal inflammation.

As is to be expected in all conditions which seriously threaten the life of the patient there has been some difference of opinion in reference to the treatment, especially in the stage previous to rupture, as at this time nothing has occurred to indicate the extent of the danger, and both the patient and her friends are unwilling to acknowledge the gravity of the condition and manifest a desire to become cured by some means less radical than an operation.

In compliance with demands of this character efforts have been made to destroy the life of the ovum by the injection of certain drugs into the sac, notably morphia, and those who have made use of this method claim to have succeeded in some cases. Others have attempted to secure the same result by the use of electricity, passing a needle connected with one electrode into the mass with the other pole of the battery placed over the abdomen and passing a strong galvanic current. Cures have been claimed for this procedure also, but the uncertainty of diagnosis which prevails in all abdominal cases renders it impossible to speak positively, and detracts from the value of the claim.

Instances have been related where, through mistaken diagnosis a pyosalpinx or other morbid mass has been punctured by the electrode with especially unfortunate results. There is another objection to this method of treatment, however, which is that there is no means of knowing accurately the result, and the fact that the ovum may still live after having been subjected to this procedure is a thought that is likely to be peculiarly disquieting to both physician and patient and creates a greater burden of responsibility than most men care to assume, and makes a comparison between such indefinite method and the prompt, certain and decisive results given by surgical procedure very unfavorable to the former.

Relief by operation is now generally conceded to be the proper course in tubal gestation, not only because the source of the danger is promptly and completely removed, but in addition the complications and sequelæ which would retard or interfere with convalescence are removed at the same time and recovery is generally prompt and complete.

Before rupture the operation is quite simple, consisting in incision through the abdominal walls and tying off and removing the gravid

tube; if the ovary be healthy it should not be disturbed.

At the time of primary rupture into the abdomen the difficulties are liable to be much greater, owing to the extensive hemorrhage and the formation of adhesions. I have never seen more definite and explicit directions concerning any operative procedure than those given by Lawson Tait in regard to this, when he advises separating adhesions rapidly regardless of bleeding, making at once for the source of the hemorrhage, the broad ligament and clamping it at both its uterine and pelvic attachments. If in doubt as to which side the hemorrhage is from apply clamps to both; then, the hemorrhage being arrested, the clots and debris may be removed, the cavity irrigated and the ruptured tube tied off and removed, with the care and attention to detail which secures the most satisfactory results.

It is simply applying the accepted surgical principle of controlling the hemorrhage which threatens life by finding the bleeding vessel and applying a permanent ligature.

Should the hemorrhage cease spontaneously in these cases of rupture and the patient recover from the shock, it is likely that operation will not be undertaken until the continued invalidism of the patient prompts interference, as the ovum generally perishes and further development stops.

In these cases the diseased appendages are removed and the effused blood washed out by a stream of sterilized water, or, what I regard as preferable, the normal salt solution, as the latter is less irritating to serous membranes. Especial care should be taken to free the deeper portion of the pelvis from clots as decomposition is very rapid after exposure to the air. The weight of authority is in favor of draining all cases that are not recent, or when there is reason to suspect further bleeding from separated adhesions or from any other source as it is quite generally known that the bleeding promptly stops if the vicinity of the oozing surface be kept dry, while on the other hand if it be allowed to remain moist the hemorrhage may go on indefinitely. A wick drain can do no harm and its use in many cases will greatly improve the patient's chances for recovery.

When rupture and effusion occur into the layers of the broad ligament and the ovum perishes, nature may remove the effusion by absorption; failing in this septic inflammation and suppuration will occur in the mass and its removal become necessary. In some cases this may be done through the vagina, though it is safer to explore the mass thoroughly through an abdominal incision even if a vaginal opening be made subsequently. In this way the precise character of the mass can be determined and its



removal can be undertaken in the direction that the examination has shown to be most feasible.

It will be remembered, however, that it is in this form of rupture that the ovum may survive tubal rupture, and, continuing its development, constantly keep the patient subject to the dangers of secondary rupture through the broad ligament. There will generally be quite a mass of blood clots surrounding the fetus, and these by their pressure often detach the peritoneal lining of the anterior abdominal wall to an extent sufficient to afford them room so that an abdominal incision brings one into direct contact with the mass which should be cleaned out carefully by irrigation, if possible preserving the peritoneal cavity from contact with its contents. If even an insignificant amount of the contents of the sac escapes into the peritoneal cavity it gives rise to symptoms of profound shock which may be followed later by peritonitis. If, however, the incision prove to be above the mass, it is better to clamp the broad ligament, wall off the intestines with gauze pads and proceed to get rid of the mass just as if the rupture were intraperitoneal. I think it is an excellent plan to drain these cases through the vagina.

When the effusion is within the folds of the broad ligament and is very low in the pelvis so that it encroaches upon the vagina, the temptation to evacuate it through an opening in the vaginal wall is very great; this method of operating is recommended by certain authorities, and at the first thought it seems the wiser course, as the vaginal opening is theoretically so free from danger and it affords so many advantages in the way of subsequent drainage.

My personal experience is that this method is by no means free from danger and the difficulties in the way of making it complete are many and great, for the reason that every step after the first incision must be conducted solely by the sense of touch, and as the mass has no other covering than the stretched and attenuated peritoneum, which is liable to rupture at any moment, and as a matter of fact often does rupture as a result of slight manipulation of the mass, it is very unlikely that any operation can be completed without a giving way of the weakened envelope at some point and the escape of some of its contents into the peritoneal cavity.

The blood in these effusions undergoes putrefactive changes resulting from its close contiguity to the intestine, which according to Bland Sutton is brought about by the penetration of the bowel by intestinal gases at points where repeated hemorrhages and development of the mass has resulted in stripping off its peritoneal covering.

This decomposed or partially decomposed blood is extremely irritating to the peritoneum,

and a small amount of it may excite a very grave septic inflammation of this membrane.

If the operation be made through the abdominal walls the cavity can be protected as a preliminary step, and then if the sac is ruptured the harm is minimized and its results can be averted because the field of operation is at all times under the observation of the surgeon, who can at once take the necessary measures to avert the dangerous results, and if, after the mass has been examined it seems best to open and drain it through the vagina, it can be done with the certainty that rupture will not occur undetected. If, on the other hand, rupture occurs without the preliminary measures to protect the abdominal cavity there is nothing to indicate it until symptoms of shock develop, and then it is too late to begin a laparotomy, and the operator is left to combat the shock and subsequent peritonitis as best he can.

When secondary peritoneal rupture occurs and the child continues to grow some authorities have advised that the operation be deferred until the child becomes viable, with the view of saving both mother and child; but the many dangers to which the child is exposed during the abnormal gestation and the deficient vitality they manifest when they go on to term, added to the fact that few women survive operation after the fourth month, owing to the difficulties and complications incident to the management of the placenta, the profuse hemorrhage which results from efforts to remove it, and the systemic infection which follows its putrefaction when left in situ are all emphatic, and I think, unanswerable arguments in favor of early operation in all cases where the condition is diagnosed.

#### PNEUMONIA.\*

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Thirty years ago pneumonia was defined as "An inflammation of the true pulmonary tissue, running an acute and definite course expressed by severe febrile symptoms which came on suddenly and attained in a few hours a great intensity, undergoing no less sudden abatement between the fifth and tenth days of the disease, while the local products or results of the inflammation were yet intense, these products being later removed." (Aitkin's Practice). The definition given in one of our most recent textbooks is "An infectious disease caused by the micrococcus lanceolatus which excites a local inflammation in the lungs, and, by its toxins, constitutional disturbance of varying intensity." (Osler).

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One is a definition based upon anatomical and clinical features, the other embraces all these plus the chief etiological factor. The discovery of this factor, the pneumococcus, in 1880, is the most important one in the history of the disease. It not only serves to explain the anatomical and clinical features with which our predecessors were so well acquainted, but it has altered the tendency of treatment and brought about a more rational method, though as yet a but slightly improved mortality rate. Our hope of better success in the future lies in the facts that we are able to approach our cases with a clearer understanding of the relation between cause and effect, with better ability to estimate the rôle which each individual element in the case plays, and with the encouragement derived from success in kindred diseases treated by similar methods.

The term pneumonia or pneumonitis, and by which we understand croupous pneumonia, sufficient as it may have been in the nomenclature of the past, is not explicit enough for present views. We need the definiteness of the qualifying term in each case, e. g., we may have a diplococcus pneumonia, a streptococcus pneumonia, a bacillus coli pneumonia, a pneumonia from the Klebs-Loeffler bacillus, and from the bacillus of anthrax. There is reliable evidence that these microorganisms each produce a specific pneumonia. The streptococcus is particularly in evidence in the pneumonias of influenza and erysipelas. We may also have a pneumonia with mixed infection.

This may, by some, be considered a refinement of diagnosis. It no doubt is, and just as certainly is it beyond the power of nine-tenths or more of us who meet pneumonia in general practice to make it. But it has an important bearing upon prognosis and treatment, and when the serum therapy of pneumonia, the specific treatment, shall have become fully established, such a differential diagnosis will be imperative in the cases where it is used.

The predisposing causes of pneumonia are many and include all those conditions incidental to human life which tend to weaken the resisting power of the individual body, and to render it at the point of election a suitable medium for the propagation of the ever-present pneumococcus, which, or some kindred organism, is the exciting cause of the disease. This briefly is the position held today with regard to the etiology of pneumonia. The facts are pretty clearly established, and in order to be able to treat our cases judiciously it is necessary that we accept them and form our plan of treatment accordingly.

The mortality in pneumonia is high. The rate is about twenty per cent. Osler states that it kills from one-fourth to one-third of all per-

sons attacked, and is the most fatal of the acute infectious diseases of adults in temperate climates. Loomis says that nine-tenths of the deaths from acute disease after the age of 65, are from pneumonia. No age nor condition of life is exempt from its attacks. It is, therefore, one of the most important diseases which we meet in general practice, and from the time the diagnosis is made until convalescence is thoroughly established, demands our closest attention and most thoughtful consideration.

The diagnosis in typical cases is not difficult. It is the irregular forms here, as in other diseases having usually a definite course, that give trouble and trip up the unwary. It is a serious mistake, for instance, to treat as acute mania a case of pneumonia with severe cerebral symptoms. It is only by carefully weighing symptoms and repeatedly searching for physical signs that such errors are to be avoided. Snap shot diagnoses are particularly to be shunned here.

When pulmonary tissue is attacked by the diplococcus the inflammation excited produces well known and generally clearly defined anatomical changes, which in the course of the disease pass through the classical three stages terminating in resolution and return of function to the affected lung or leaving it permanently diseased. The toxins generated deleteriously affect the nervous system in a degree proportionate to quantity and virulence. These conditions combine to cause alterations from the normal in temperature, respiration, and circulation, and even in the functions of other organs. From these pathological states we derive our indications for treatment.

The mode of death in the majority of cases of pneumonia is by heart failure. It may be that in exceptional cases, as in double pneumonia, death results from literal suffocation for want of air space in the lungs, but this is not the rule. The heart failure is due to toxæmia, to the effect of toxins, not upon the integrity of the heart muscle, but upon its nervous supply. If the heart is already weakened by degenerative changes or overburdened by chronic disease so much the worse.

The theory that heart failure in pneumonia is the result of high temperature weakening the heart muscle through structural changes is considered no longer tenable, for those acute structural changes are rarely found post mortem, either in pneumonia or in acute diseases with much higher temperatures, while on the other hand heart failure occurs most frequently in those cases in which the nervous symptoms are most prominent, irrespective of temperature.

The last case of pneumonia which I treated in St. Luke's Hospital, in Duluth, died of heart failure on the tenth day. Only once in the whole course of the disease did the temperature reach

104°. That was on the evening of the second day, shortly after admission. And only twice thereafter, on the evenings of the third and fourth days, did it reach 103°. At other times it ranged from 98.2° to 102.6° and this without a single dose of any antipyretic whatever, or any other measure directed against the temperature. The heart began to show signs of failure on the eighth day, toward evening, with the temperature at 101.8°, by dropping every sixth or seventh beat, as felt at the wrist. There was never any sign of a crisis. There was no organic disease preëxisting as a complication, neither could heart failure be attributed to increased demands upon it through extensive consolidation of lung, for only the lower lobe on the left side was involved. The patient was a male, young and robust. The nervous impression in the case was intense from the beginning.

The accumulated evidence from various quarters tends also to discredit, or to accept conditionally, the theory that the heart is weakened by increased work thrown upon it by the obstruction through hepatized lung. We see many cases die from heart failure where the physical signs and the post mortem findings show but a small area of hepatization, and many others with practically no heart symptoms where the area is extensive. The experiments of Prof. Welch, of Johns Hopkins, show that it is extremely difficult to raise the pressure in the pulmonary artery by cutting off areas of circulation in the lung much more extensive than are involved in pneumonia. There is furthermore, a vast deal of positive evidence that the heart failure is due to toxæmia. It has been shown that the toxins of the acute infectious diseases paralyze the vaso-motor centers. Romberg in a series of experiments, found that "the blue pus bacillus and the pneumococcus paralyze the vaso-motor centers in the medulla. The pneumococcus did not affect the heart (muscle) which retained its efficiency to the last, even for some time after vaso-motor paralysis." In 1897, Kohn, of Berlin, made a series of bacterial examinations of the blood. In that part of his investigation which was concerned with lobar pneumonia he made examinations in thirty-two cases. In nine of these he positively identified the pneumococcus. Seven of these nine cases died, and the two which recovered were complicated, one by pneumococcus empyema, the other with pneumococcus abscess. Eighteen of the twenty-three negative cases recovered; five died. Two of these five had secondary streptococcus empyema, one was alcoholic, and in another, bacterial examination of the lung showed the pneumonia to be probably due to the influenza bacillus. Kohn concludes that the presence of the pneumococcus in the blood is a bad prognostic omen, and that death in these cases is due to pneumococcus

sepsis. It seems to me that these fatal cases in which the pneumococcus was found in the blood, while they serve to explain certain secondary complications, forcibly illustrate a difference in degree in the toxæmia which may exist and also suggest an additional cause of heart weakness in a vitiated blood supply unsuited to its nourishment. Vitiated blood supply as a factor in heart failure is noticed by Bollinger, who, upon the basis of the anæmia of all the organs, more particularly the skin, brain, liver, kidneys, and spleen observed by him in a series of autopsies in pneumonia cases, calls attention to oligæmia as a prominent feature of the disease. The poverty of the blood he attributes to the drain upon it during the formation of the pulmonary exudate. The collapse and heart failure of the crisis he explains "as the direct results of the oligæmia in consequence of which the already greatly weakened heart gives out because of an insufficient blood and oxygen supply. The exudate, it is claimed, is composed almost entirely of blood constituents and has almost the same effect as rapidly recurring hemorrhages. We cannot afford to ignore a theory which while harmless in its tendency gives so useful an indication for treatment.

It is quite probable that the dilated right heart often met with is not due directly to the pulmonary obstruction from exudate and œdema, but that both are due to a primarily weakened left heart, by which stasis takes place in the pulmonary circulation.

The treatment of pneumonia is in the transition period. One cannot look through the literature on this subject for the past thirty or forty years without being impressed with the wide range in method and the uniformity of results as shown by the death rate. One is forced to pause and ask "have those died on account of treatment, or these got well in spite of it?" The hardest thing in the world to say with certainty in the care of the sick is how a particular case would have terminated under a different line of treatment. Almost any plausible method has been able to find its apostle and its ardent followers, and if sufficient enthusiasm be shown, and proper diligence in compiling statistics, each method may be made to appear the best. Nothing can be much more misleading, owing to variability of action in the infective exciting cause, than statistics compiled to show the efficacy of any particular treatment confined to the dominant use of some one agent such as ice, digitalis, or heat.

We hear a great deal said about the disease changing its type. We have heard the same said about diphtheria and typhoid fever. It is hard to conceive how an acute disease, due to a specific infection, which must have been the same one hundred years ago as today, could in that time

have materially changed. It is altogether probable that the same variations have always existed.

Since the passing of active antiphlogistic treatment down to the present time the death rate has been about the same. The natural inference would seem to be that the methods of treatment during that period have been about equally effective. The salutary methods of the comparatively recent past have offset the vicious ones, and the meddlesome ones of today are still active to counteract the more conservative and beneficial. Amid it all the hobbyist rides on, too apt to be unmindful of the self-limiting nature of the disease and the "vis naturæ medicatrix."

With our present views of pneumonia, treatment may be divided into specific and symptomatic. The specific or antitoxin treatment, owing to difficulties in controlling pneumococcus cultures is not yet upon a practical basis. A reliable serum is not on the market within the reach of the general practitioner, who must therefore, for the present, confine his measures to the requirements of the second division, the symptomatic.

Symptomatic treatment does not mean a treatment of symptoms, as the Irishman at Donnybrook Fair treats heads, after the motto, "when yez see a head hit it," but implies a correct appreciation of the relation of symptoms to the physiological processes of the particular stage of the disease at which they appear, as well as of their influence upon ultimate results. No treatment of any symptom or group of symptoms is able to juggle the disease or to shorten its course. The toxins are active till nature produces their antitoxins. This covers a longer or shorter period according to the quantity and virulence of the infection on the one hand, and the ability of the system to resist and counteract on the other. The main indications for treatment, therefore, are to conserve and support the vital forces, and to increase and hasten elimination. It is all important in the start that we realize that it is the patient who is to be treated and not an abstract entity called pneumonia.

One of the duties of our first visit is to arrange for the very best surroundings possible for the patient under the circumstances. No detail which will in any way add to his comfort is too trivial for our notice; and no surroundings are so miserable that by a little tactful management they cannot be improved.

Several prominent symptoms confront us at the outset, pain, elevated temperature, a beginning consolidation, a deranged respiration and circulation. Conservation of nervous force demands that the pain be subdued. The quickest and most effective means are a hypodermic of one-sixth to one-quarter grain of morphia and the local application of heat. In some cases the re-

active inflammation of the onset may be so great that a high temperature will call for interference on the same ground. In extreme cases the cold pack is the best means to use. It is the most grateful to the patient and the safest. In country practice it is generally necessary that the physician give this himself. It is not safe to trust it to the family. Fortunately it is, I think, not often required. Generally, not only at the onset, but throughout the course of the disease, cold frictions will be sufficient to meet the demands of pyrexia. One of the neatest ways of using cold where ice is obtainable, is by friction of the body surface with a piece of ice wrapped in one thickness of a wet napkin or coarse towel. This will reduce the temperature all that is necessary, is tonic and sedative to the nervous system, improves capillary circulation and thus relieves the heart, stimulates the respiratory apparatus, and favors oxidation and elimination.

The disposition to regard high temperature as an element of danger per se is noticeably disappearing. Pyrexia is looked upon as necessary to the elaboration of antitoxin and the oxidation of toxic products. It is a measure of the system's power of resistance, and a temperature of 106° may be no more hyperpyrexia in one case than 103° is in another. It is the effect upon the nervous system that is to decide whether a given temperature is hyperpyretic or otherwise. A high temperature, providing that it is not continuous, but remits some time in the twenty-four hours is not dangerous. It is the low temperatures in otherwise grave cases which are to be feared as indicating low resistance.

The temptation to give an active antipyretic drug of the coal tar series is great, especially in country practice, where the laity hold tenaciously to the belief that the fever is the thing and are prone to measure the doctor's efficiency by his ability to break it, and where other means are not always so easy of application. These drugs should as much as possible be avoided because the principle of such treatment is bad, interfering as it does with nature's efforts to cure, and because they have a harmful action upon the blood and heart. As a rule we should not meddle with pyrexia unless the comfort of the patient and the impression upon the nervous system demand it.

Of the utility of measures directed toward the limitation of the exudate I am skeptical. Beverly Robinson has spoken highly of kermes mineral in one-thirty-second grain doses in syrup of acacia and orange flower water every two hours to modify pulmonary congestion, increase fluidity of the sputum, depress circulation and lessen dyspnoea. This salt of antimony given thus, he claims, does not derange the stomach nor weaken the heart, but modifies hepatization, and is eminently useful in the first and second stages.

Dr. Thomas J. Mays, of Philadelphia, is a strong advocate of ice cold applications, by means of one or more ice bags over the seat of the infiltration, following it up as it advances, and has made a number of collective reports to sustain his position. But it seems to me that one may reasonably question whether he is heading it off or chasing it. The tendency of this lesion is toward self limitation, therefore, why should we annoy a patient by a measure which is of doubtful utility and of which he must at least be extremely conscious.

Next demanding our constant and careful attention is the condition of the heart. Of this we must keep informed by frequent examinations. The physician who has a case of pneumonia in the country, ten miles from his office, has good cause for anxiety. He cannot very well make more than one daily visit, and yet he feels that he ought to. In grave cases he must, and more than that, he must not hesitate to stay by his case for twenty-four hours or more at a time. The only hope for a failing heart is early detection and prompt action. It behooves us in the country more even than our city brethren to avoid harmful medication in the early stage, and to begin sustaining treatment early. The heart is generally able to take care of itself during the first three days. About the end of that time begin giving strychnia in tonic doses of one-thirtieth grain three times a day for mild cases, and oftener in graver ones, according to need and effect. Whisky, judiciously used, goes hand in hand with strychnia in the severe case. Whisky is a whip and must be used as one. The alcoholic attacked by pneumonia needs the whip from the start. Strychnia acts as a vaso-motor stimulant and counteracts the paralyzing effect of the pneumo-toxin. Over stimulation of vaso-motors is not desirable. Too great contraction of capillaries producing excessive tension is as harmful in weakening the heart, perhaps, as a greatly relaxed condition through vaso-motor paralysis. We must consider how far this effect of the pneumo-toxin may be nature's means of relieving the heart, and interfere only to the extent of preserving a safe working equilibrium between heart and vessels. The pulse and color of the skin must tell us this. We cannot safely drive a heart to overcome obstacles such as it has to meet in pneumonia, but must sustain it under its burden and favor it by lightening its load. It is for this reason that strychnia is a better and safer remedy than digitalis.

Threatening heart failure from over distension of the right heart is best treated by nitroglycerin in one-hundredth to one-twenty-fifth grain doses. Here it is necessary to temporarily dilate superficial vessels, to relieve the heart by bleeding the veins into the arteries. Here most distinctly do we carry out the principle of saving

the heart by decreasing its load. In conjunction with nitroglycerin may advantageously be used surface heat, cloths wrung out of mustard water wrapped about the extremities and applied to the chest, or frictions with cloths wet with mustard water, to cause a more active determination of blood to the skin and to improve capillary circulation.

The absorptive power of the stomach cannot be depended on and heart stimulants in these emergencies should be given hypodermatically.

The second general indication for treatment is elimination of toxic products. Unless there are special contraindications I think it well to give, at the outset, five grains of calomel with fifteen grains of bicarbonate of soda, to be followed in ten hours with a mild saline. The bowels are to be kept open thereafter by some tonic laxative. The best is the aromatic extract of cascara sagrada, or the pill of aloin, strychnia, belladonna and cascara. Enemata may occasionally be required. In any event the bowels must not be allowed to accumulate gas or fecal matter.

The functions of the skin and kidneys must be promoted. If there is any place in the treatment of pneumonia for routine practice it is in aiding the activity of the different emunctories. By so doing we satisfy the natural desire of friends to have something done and can be reasonably sure that we are doing no harm. A combination of spts. aether. nitrosi, potas. acetat. and liq. ammon. acetat. in orange flower water is a useful diuretic and diaphoretic which may be given throughout the whole course. Drinks made with vegetable acids are useful and grateful to the patient. Water in suitable quantities should be allowed ad libitum. It thins the sputum, washes out the tissues and promotes excretion.

In cases where the exudate is extensive, enteroclysis or hypodermoclysis of normal salt solution to the amount of one to two quarts in the twenty-four hours has been advocated to supply to the blood the chloride of which the exudate has robbed it. It stimulates the heart and favors elimination.

With all our other treatment the diet is not to be neglected. It should be nourishing, not over-stimulating in the active stage, easy of digestion, varied and suitable in quantity. Milk, plain, predigested or malted, should have a prominent place on the list. It is to be remembered, however, that milk unmodified is a solid food. Beef teas, broths and extracts are useful adjuncts, but are not to form the basis of diet.

Robinson extolls the use of black coffee as both a food and a stimulant. He says: "Black coffee and alcohol, particularly old brandy or rum, by the stomach will be assimilated and hold the vitality of the patient when other food

or stimulant will be of little or no apparent benefit."

Finally, we should insist upon records being kept during the interim between our calls, and carefully record our own observations at each visit.

Treatment upon the plan here outlined, I believe to be neither ultra-conservative nor meddling, and for the present to offer the best chance for success.

### TREATMENT OF UTERINE FIBROIDS.\*

BY F. A. DUNSMOOR, M. D.,  
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Hardly a day passes that I am not consulted by a patient who has a uterine fibroid of greater or less size. Some writers state that one woman in every ten has a uterine fibroid. Others make the percentage higher, even fifteen per cent. The remarkable frequency of this disease and the probability of the amelioration of many of its most distressing symptoms by simple methods of treatment, induced me to select the topic of "Treatment of Uterine Fibroids" for this brief paper.

With all the opportunities offered to the medical investigator and the pathologist, the specific cause for fibroids has not been discovered, although it must be remembered at the present day that heredity is an important factor. The growths appear so frequently in sterile and unmarried women as to eliminate pregnancy as a cause, although the tumor is often developed with the fetus in utero. The decade between twenty-eight and thirty-eight years is the one in which the greatest number of fibroids is found. Dr. Emmett believes that the unmarried woman at this period is "twice as liable to fibroids as the married woman, sterile or fruitful."

He says, "It seems as if it were the purpose of nature that the uterus should undergo a change, dependent upon pregnancy or lactation, about every three years throughout the child bearing period, and that if the uterus is not physiologically occupied in childbearing, the fibroid will be more rapidly developed."

Brooks Wells says, "myomata of the uterus are more common in old maids than in married women." It is an undeniable fact that negroes are more liable to fibroids than white women. A variety of symptoms arise from growths which vary in size from that of the smallest shot to the extreme capacity of the abdominal coverings, but it is beyond the province of the writer to consider, at this time, symptoms, complications and diagnosis other than as these conditions bear upon

the treatment, but once the diagnosis is made, we believe it to be the duty of the physician to begin that form of treatment which seems the most applicable to the type of fibroid present, even if the tumor is creating no disturbance at the time. It is admitted that fibroids are benign growths, and the question of the fibroid degenerating into sarcomatous or carcinomatous conditions is generally disbelieved.

We will consider medical, electrical and surgical treatment, but under these separate headings we are obliged to resort to special procedures for the different types of fibroids.

#### SUBMUCOUS.

Submucous fibroids are a type, which in my experience, are found either singly or associated with some other type, in twenty-five per cent. of all the cases. In this variety the patient usually applies for a relief from a dragging sensation, persistent leucorrhœa or alarming hemorrhage, and all the symptoms may be present and due to a growth so small in size as to scarcely enlarge the uterus, and the tumor itself be undiscovered save by intrauterine examination. It will be necessary to use vaginal disinfectants of which lysol is the best example, when examination of the uterine cavity is to be made. The instillation, semi-weekly, within the uterine canal, of a drop of Churchill's tincture of iodine, turpentine or a weak solution of chloride of zinc or, if either is not easily obtainable, an application of the tincture of the muriate of iron is especially beneficial. Internally, I should give uterine sedatives like bromide of sodium, black haw, belladonna or hyoscyamus, and if the uterus is soft and flabby, uterine and muscle tonics like ergot, strychnia and hydrastis. Tampons which are saturated with glycerine holding in suspension alum, zinc, turpentine or hydrastis should be applied around the cervix.

Associated with these remedies, when the growth is large enough to be discovered upon examination, with or without dilatation of the cervical canal, the tumor should be removed by curettage, serrated spoon, snare or forceps. Following such manipulation the uterine cavity should be swabbed out with iodine and carbolic acid ten per cent., or any of the astringents named in the first class.

During an attack of flooding the administration of coal tar derivatives, particularly antipyrine, or the injection of a saturated solution within the uterine cavity has a decidedly beneficial effect. As in any other disease where the patient has lost much blood it will be necessary to resort to general tonics, and particularly, those which supply the sanguinary fluid. Iron, manganese and hypophosphites associated with arsenic and muriate of ammonia, are among our choice of remedies.

\*Read before the Hennepin County Medical Society, February 6, 1899.

If constipation is present it should be controlled by interrupted doses of mild chloride of mercury with cascara sagrada. We have oftentimes seen hypodermic injection of one-hundredth of a grain of atropine have a decided effect in quieting the bearing down sensation and diminishing the hemorrhage. If the patient is particularly wakeful and nervous give one-half a drachm of chloral per rectum, and if the patient is not asleep in three hours the dose is repeated.

#### INTERSTITIAL.

In the interstitial type, in which the enlargement is usually symmetrical with the shape of the body of the uterus, the patient frequently complains of symptoms associated with the submucous variety, but more likely is disturbed on account of pressure against the abdominal viscera, associated with some cystitis, bowel disturbance, backache and the bearing down sensation which so frequently accompanies the menstrual flow. Before the tumor is sufficiently large to have escaped from the pelvic cavity, the patient complains of reflex pain in the occiput or in the temporal region.

Medical treatment of this class of cases combines usually the administration of bromide of sodium with the exhibition of the thyroid extract, three or four times a day, in doses increasing from five grains. In my own experience this is the only class in which ergot has a decidedly beneficial effect. It must be given continuously, and when associated with the thyroid extract and the application of the positive electrode in the uterine canal and the large clay cathode or the Martin membranous abdominal electrode directly over the abdomen, secures the greatest number of cures over any method, aside from the surgical procedure. The current which I employ is taken from the dynamo in the office in the New York Life building, voltage, one hundred and ten, and the current, usually begun at twenty-five, run up as high, sometimes as two hundred milleamperes.

#### INTRAMURAL AND SUBPERITONEAL.

Intramural and subperitoneal fibroids are affected very little by medical remedies. The greatest benefit to be hoped for is secured by the administration of the thyroid extract and electricity, my experience in this variety being exactly opposite to that of Prof. Franklin H. Martin of the Post Graduate School of Chicago. When I first began the use of electricity in the treatment of fibroids, the positive pole terminated in a needle which was introduced into the growth through Douglas' cul-de-sac whenever possible, and the abdominal electrode used as above.

Later, I used the vaginal electrode as furnished by the Macintosh Company of Chicago,

and am obliged to confess that I was disappointed in the results from either, or the combined methods.

Exactly why the use of electricity should be beneficial in the treatment of fibroids is not explainable by the writer, but it is unnecessary for me to read to this intelligent body the vast number of names of prominent men of our profession, of undoubted veracity, who report astonishing cures by this method. While I cannot say that I have cured, in the sense of having caused the tumor to completely disappear by this method, many fibroids have ceased their rapid growths, and patients who were having alarming hemorrhages have been much benefited by this treatment in my office.

It is well known that the action of the anode in the animal tissue is to dry up and drive the blood from the surface to which it is applied, while the reverse is true of the negative pole. Hence, we understand this much of the beneficial effect of galvanism to the uterine cavity in hemorrhagic cases. The positive pole is also decidedly antiseptic and lessens the caliber of the blood vessels in its proximity.

Dr. Martin believes that the acid generated by the positive pole combines with the copper of the electrode to form salts, which, by cathoresis, are driven into the uterine tissue, thus producing a true styptic effect. There are many women who are frightened to distraction at the mere suggestion of a hysterectomy, or indeed, of any surgical procedure, but eagerly submit, with the greatest amount of fortitude, to the application of the powerful electric current up to the point of pain, having semi-weekly sessions lasting from ten to fifteen minutes at a time without a murmur. In these cases where the discharge is purulent or there is a profuse catarrh, the canal is first curetted and iodine, zinc or muriatic acid applied.

I have often reduced the size of goitres by the electric method. Illustrating the fact that the beneficial effect of this current is not limited to uterine fibroids, I will mention the case of a patient from whom I removed a large ovarian tumor, who was also afflicted with excessive enlargement of the lymphatic glands of the neck, and on my suggestion to have them treated, promptly told me that as soon as she was able to return home, she, herself, could control them by the application of a galvanic battery which she possessed.

#### SURGICAL TREATMENT.

From the laity and the general practitioner, and also from a large majority of the surgeons, comes the demand for conservatism in the treatment of all abdominal growths, and the demand is certainly applicable to uterine fibroids, so that now, often operations of much less magnitude

than a complete hysterectomy are made for the relief or cure of these tumors. Mr. Tait believes that in certain selected cases the removal of the uterine appendages is sufficient to cure the tumor and its symptoms. Tait, Hegar and Battey conceived the idea of an operation for the removal of the appendages for the purpose of creating an artificial menopause, and each published his idea in the year 1872.

While it is known that many cases of fibroids have increased in size or undergone distinct degeneration at the time of the change of life, still, in the majority of cases, fibroids have improved without treatment, at, or after this period, and while the operation for the removal of the tubes or appendages frequently fails to terminate menstrual life, still, the operation has often proved sufficient, in good hands, to satisfactorily control the growth of fibroids in the uterus. It must be admitted that it has also been as complete a failure for this purpose, as it has for the establishment of the change of life.

In our own country the habit is growing, to make, in all pedunculated, subserous and many intramural cases, what is known as myomec-tomy, or to treat the tumor exactly as if it were a growth on the outside of the body, instead of connected with the uterine organs. Dr. Martin has also devised an efficient operation for the purpose of shutting off the blood supply of the uterus and its fibroids, which has proved very successful in his hands, and which is to be commended to the profession. I quote from Dr. Martin's book a description of the operation as follows: "The ligation of more or less of the broad ligament of the uterus with its vessels and nerves, the extent of the ligation depending upon the result sought, from a simple ligation of the base of the ligament, including the uterine arteries and branches of both sides, without opening the peritoneum, to a complete ligation of the ligament of one side, including both uterine and ovarian arteries, with partial ligation of the opposite ligament without opening the peritoneal cavity, if possible, but by doing so if necessary.

"The results sought in the operation are, first, to check uterine hemorrhages by cutting off blood channels, and secondly, to produce atrophy of the fibroid by first depriving it of nourishment through the blood vessels, and secondly, changing the nutrition of the uterus by interfering with its nerve supply."

After the established antiseptic precautions the technique of the operation is as follows: "The uterus is drawn down in order to put the broad ligaments on the stretch, and then drawn to the right side so as to expose the left vaginal vault. The mucous membrane of the vagina at the utero-vaginal fold on the left is then caught with a tenaculum and incised with a pair of

curved scissors. One blade is allowed to enter beneath the mucous membrane and a curved incision one and one-half to two inches long, is made over the broad ligament and at right angles to it. By means of the index fingers of both hands the operator now separates the vaginal tissue of the broad ligament and carefully separates the broad ligament in front from the bladder for a height of two inches, and laterally for nearly the same distance. The bladder should be carefully separated in this way in order to avoid the danger of wounding the organ, and by pushing the separation laterally the ureter is forced out of danger. One then carefully separates the broad ligament posteriorly to the same height as in the front, without, if possible, penetrating the peritoneum. Now, by passing one finger behind the other in front, the whole base of the broad ligament, representing two-thirds of its bulk, can be grasped for a distance of an inch to an inch and a half from the uterus. In this grasp one can easily feel the throb of the main trunk of the uterine artery, and occasionally, several branches. The curved pedicle needle is then passed, armed with No. 10 silk, strong pyoktanized cat gut or kangaroo tendon, and guided by the index finger of the left hand, is made to penetrate through the broad ligament. The ligature is drawn through, the needle removed and the base of the broad ligament is thoroughly ligated at a distance of an inch or more from the uterus. The ligature is cut short, leaving it buried in the tissues. The broad ligament is treated in the same manner."

Dr. Martin intends this operation for controlling the interstitial fibroid of moderate size, and particularly, those fibroids appearing late in menstrual life and in such cases where the major operation is particularly undesirable. It is certainly the method to be selected for the class of cases which has been practically exsanguinated by profuse hemorrhage until the patient is so exhausted that one does not dare to perform an abdominal hysterectomy.

After all that has been said or done, that is possible, for the relief of the patient with fibroid by simpler or milder means, this one great fact remains that the one absolute, sure cure for uterine fibroids is hysterectomy. This operation formerly was considered so dangerous that the most intrepid surgeon pushed his work in this direction with the gravest apprehensions. Now, with the advancement of surgical knowledge, antiseptics, technique and experience, it has become almost, if not quite, as safe an operation as a double ovariectomy with which it is not unfrequently associated.

All those cases which seriously interfere with the mind or bodily comfort, either by pressure effects or hemorrhage, or interfere with domestic happiness and are not relieved by any of the



methods described, should certainly be cured by this operation. Once this is decided upon we still have the question of the route and the method to be employed. In women who have borne children, and if the tumor does not extend beyond the pelvic cavity the vaginal route is to be employed, although it is the writer's belief that those tumors which are so large as to require morcellement before they can be removed per vaginam, should be extirpated by the abdominal route, since, in the hands of a large majority of surgeons of undoubted experience, the latter will be shorter and safer.

Having decided to remove per vaginam, the writer believes that instead of following the practice of making strong traction upon the cervix through the vagina, enucleating the mass as fast as it can be extricated from the vulva, that exactly the contrary method should be applied. First, the cervix is completely girdled by an incision extending through the vagina, passing close to the uterine neck. The incision is extended, if necessary, three-fourths of an inch on either side, then the tumor and the cervix are pushed as deeply into the pelvis as possible, while the fingers separate the bladder by pushing it from the tumor or uterus itself, until the peritoneum is reached. The same procedure is adopted through the posterior cul de sac, then the uterine arteries and the lower portion of the broad ligament are tied and divided close to the uterus. If there is difficulty in removing the growth through an incision as described, the opening may be enlarged by incising the vagina in the median line antero-posteriorly. If this opening should still prove insufficient, the uterus may be divided through the center and one-half delivered at a time.

In about one case in ten after vaginal hysterectomies, I unite the divided surface at the extremity of the vaginal vault by suture. Ordinarily after the pelvis has been cleansed, the edges of the wound are simply approximated and the vagina loosely filled with iodoform gauze and the patient put to bed, experience having shown that the wound unites perfectly and without complications. Tumors which are sufficiently large to have a diameter greater than that of the pelvis, are invariably removed by the abdominal route, by the writer. The length of the incision depends upon the size of the tumor, and in extreme cases, may extend from the pubes to the ensiform appendix, and in one enormous growth, upon which I operated, lateral incision was required in order that the huge tumor could be extricated.

In earlier operations, as soon as the uterus and tumor were freed from their bed and pulled up through the abdominal wall, the *serre nouë* was thrown around the mass as close as possible to the bladder, and when this garrote was sufficiently tightened, two long steel needles or

hat pins were driven through the cervix, above the constricting wire, while the amputation was made above the transfixing pins, and the peritoneum immediately below the wire was stitched to the mural peritoneum and the wound closed. There is no doubt that in many growths this is the safer and more rapid procedure. However, in the last fifty cases done by the writer, the method has been that of Baer or Kelly, in which the amputation is made after the ligation of the broad ligaments and the vessels between them, the stump covered in by the peritoneum after the antero-posterior walls have finally united by buried cat gut sutures.

It is not my intention to consider, tonight, the many varieties of hysterectomies which may be made, since the first intention was simply to call attention to various successful methods of treating the fibroids before coming to the "dernier ressort."

#### DIET IN ACNE.\*

The regulation of the diet in this troublesome and so often obstinate affection, is now generally admitted to be the most important element in the treatment of the disease. Patients themselves will usually have been trying various dietary experiments along with the ordinary home remedies before consulting a physician. Unless, however, the most explicit directions are given as to the proper diet, serious mistakes will be made by patients in the selection of foods, and especially as to its quantity. As Dr. Jackson says, in his *Manual of Diseases of the Skin*:\* "The well-to-do are prone to eat too much, and it is remarkable how rapidly their acne will improve by reducing their diet to the simplest elements. In many of them a milk diet, provided milk agrees with them, will accomplish a marked benefit." On the other hand, many young girls almost starve themselves entertaining the mistaken idea that a low diet will give them a fine complexion. Nothing could well be less true than this. Especially is there a prejudice against butter. The old explanation that skin eruptions were mainly due to the use of too much butter still remains absolutely true for most non-medical people, and even for some medical men. That butter should be used freely and that cod-liver oil and iron should be the only drugs required in many cases, as Dr. Jackson insists, would, to these good old conservatives, seem rank heresy. It is evident that more definite ideas as to the diathesis that underlies the etiology of acne have been acquired, and that the dietetic management of it rather than any empiric use of vaunted specifics constitutes the most modern therapeutics of this extremely frequent and bothersome condition.

\*From advance sheets of the third edition of a Ready-Reference Hand-book of Skin Diseases, by George Thomas Jackson, M. D. Lea Brothers & Co., Publishers.

# NORTHWESTERN LANCET.

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MARCH 1, 1899.

## NEW INHALATION TREATMENT FOR PHTHISIS.

An investigation into the use of inhalations of volatile oils and some other substances in the treatment of phthisis has just been made by Dr. William Murrell, of London, whose reputation as a skillful physician, a careful observer and a reliable experimenter, is so high that the results obtained will attract much attention from the medical profession. The experiments were called for by the repeated claims that have been made of the value of inhalations of various volatile substances in the treatment of phthisis, and it is gratifying to have such claims thoroughly sifted by Dr. Murrell's investigation, of which a full report will be found in the British Medical Journal of January 28, 1899.

The experiment was a two-fold one, clinical and bacteriological. Two of the essential oils were chosen for the purpose, namely oil of cinnamon and oil of peppermint. It is known that these oils in concentrated form have bactericidal power; the question to be determined was whether the same power can be exercised in the volatilized oil as it penetrates the lungs when inhaled. The clinical observations were carried on upon some twenty phthisical patients who were not confined to the bed, and consisted of causing the patient to inhale, daily, air impregnated with the oil of cinnamon, or oil of peppermint. The trial was extended over six

months and was then abandoned as without beneficial results.

The bacteriological experiment involved the use of a somewhat complicated apparatus by which sterilized air was drawn through the oil to be experimented with and into a jar containing tubes of a culture medium recently inoculated with the bacillus tuberculosis, the whole being inclosed in an incubator. As a control some of the tubes were hermetically sealed with paraffine. The time of exposure to the air impregnated with oil varied in different experiments from two to ten days, but in no case could it be seen that there was any retardation of the growth of the bacillus in the open tubes when compared with the growth in the sealed tubes. As a further control it may be stated that other tubes inoculated at the same time and with the same culture as the tubes experimented upon were covered with india rubber caps and put in a distant incubator, where they were in every way subjected to conditions similar to those in the first incubator except that the vapor of the oil was not passed over them. As compared with the paraffine sealed tubes in the first incubator, these rubber capped tubes in the second incubator showed no difference whatever in the growth and development of the bacillus.

The experiment was made twice with the oil of peppermint and twice with the oil of cinnamon with the same result in each case that the oils failed entirely to check the growth of the germ. The next experiment was conducted in precisely the same way except that instead of the oils a six per cent. solution of formaldehyde was taken. The result was that while all the controls grew well there was no growth whatever in the tubes left under the influence of the formaldehyde vapor for two days, for four days or for ten days.

A clinical experiment was then made with formaldehyde, using a six per cent. solution, a strength which it was found could be borne by most patients while some tolerated a considerably higher percentage. The inhalation was made once or twice a day by means of compressed air made to bubble through a solution of formaldehyde. With some patients considerable irritation of the back of the throat was produced which induced violent cough, but in the main the treatment was well borne. Of twenty cases

so treated the results were inconclusive in six because other methods of treatment were pursued at the same time. Of the remaining fourteen, twelve received marked benefit, while in ten the treatment practically failed. The cases that were benefited were by no means light ones, five having well marked cavities and two complication in the form of tubercular laryngitis.

In conclusion Dr. Murrell states it as his belief that the best way of treating tuberculous phthisis is to obtain the bacilli from the expectoration, cultivate them, pass over them various volatile substances until one is found which will arrest their growth, and then administer it by inhalation to the patient. This by no means precludes the use of fatty foods and other substances, such as cod liver oil."

### BOOK NOTICES.

**The Pocket Therapist.** By Thos. Stretch Dowse, M. D., Fellow of the Royal College of Physicians of Edinburg; etc. New York: Wilbur B. Ketcham. [Price, \$1.50, net].

Apart from its claim to be "the most complete, smallest, and handiest dictionary of treatment issued," this little work is of particular interest to Americans because it is written on the other side of the water and so differs somewhat from similar works written in this country.

**The Practice of Obstetrics.** By American Authors. Edited by Charles Jewett, M. D., Professor of Obstetrics and Diseases of Children in the Long Island College Hospital, New York. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1899. [Price in Cloth, \$5.00, net].

The list of contributors to this volume contains so many of the best known names in obstetrics and allied branches in this country, and the writers represent so many of the leading medical colleges of the United States, that the book is entitled to claim to be a representative American obstetrical work. Among others are to be found sections by Chapin, of the New York Post Graduate School; E. P. Davis, Professor of Obstetrics at Jefferson; Etheridge, of Rush; Henrotin, of the Chicago Polyclinic; Jewett, Professor of Obstetrics in the Long Island College Hospital; Palmer, of the Ohio Medical College; Webster, of McGill, and Williams, of Johns Hopkins.

The book is an eminently practical one, going into the details of the nature of the various phenomena of childbirth, the mode of origin of various morbid conditions, and the method of

management in both normal and abnormal cases. In these particulars it is hardly possible to be too minute, otherwise some of the sections might be open to this criticism. Where all the parts are good to praise one in particular may be invidious, and perhaps it is best only to call attention to the chapter relating to the care of the newborn babe, in particular to what is said of bringing up feeble and premature infants.

In conclusion it may be said that few works have been published that are more richly and profusely illustrated, both in black and white, and in colored plates.

**The American Year-Book of Medicine and Surgery.** By Many Writers. Edited by George M. Gould, M. D. Illustrated. Philadelphia: W. B. Saunders, 1899. [Price, \$6.50, cloth. For sale by subscription].

The Year-Book is so far ahead of all other reviews of the medical literature of the preceding twelve months that it may be said to have no competitors. Each succeeding volume gives evidence of an improvement in the work as its makers grow in experience with the vast undertaking to which they have set themselves. As the references are not given in the text, but only indicated by the use of superior figures there is an absence of the feeling that the article read is a mere collection of abstracts from recent medical literature. It is more as if one were reading an original paper filled with copious references to other writers. Perhaps the most valuable part of the articles presented in the Year-Book is to be found in the suggestions as to treatment which they contain, for the writers have evidently given particular attention to this branch of the subject and supply copious suggestions that have been recently made. Probably the average practitioner will think this the most useful part of the work to him, and although it may well be questioned if this estimate is warranted by the facts it is at least safe to say that its therapeutics alone make the work indispensable to those who would keep up with the times.

**Annual and Analytical Cyclopædia of Practical Medicine.** By Charles E. de M. Sajous, M. D., and One Hundred Associate Editors. Illustrated. Volume II. Philadelphia, New York, Chicago. The F. A. Davis Company, 1899.

The second volume of the successor of the "Annual of the Universal Medical Sciences" covers the topics included alphabetically between "Bromide of Ethyl" and "Diphtheria." The articles consist of a summary of the subject treated, with particular reference to its literature for the past three years. That these articles are not merely hasty sketches is shown by the fact that the topic "Diphtheria," for instance, covers fifty-

seven pages, "Deaf-mutism," thirty-two, and "Cirrhosis of the Liver," thirty-six.

The combination of a brief general synopsis of a medical topic with extracts from its most recent literature is a most happy one, and the resulting articles make excellent reading. The completed work will form a library in itself and a library that will contain the cream of medical literature down to the day of publication of the last volume.

A Text-Book of Mechano-Therapy. By Alex. V. Grafstrom, B. Sc., M. D., Late Lieutenant in the Royal Swedish Army; etc. Illustrated. Phila. W. B. Saunders. 1899. [Price, \$1.00, net].

From this work the physician may learn how to reach the highest results with passive and resisted motion with the least expenditure of time and effort. Perhaps there is no more striking example of the beneficial effects of this kind of treatment than is to be found in the combination of resisted movements with stimulating baths in the treatment of some forms of disease of the heart, the Schott method. All the movements necessary for this form of treatment are described in this book, with illustrations that greatly help out the text.

#### ANNOUNCEMENT.

Messrs. Lea Brothers & Co. announce for publication this month the first volume of "Progressive Medicine," a new annual which will be issued in four handsome octavo, cloth bound and richly illustrated volumes of about 400 pages each. The several volumes will appear at intervals of three months. In this age of unusual progress, so rapid is the advance in all departments of medical and surgical science that the need for condensed summaries which shall keep the practitioner up to date at the least possible expenditure of valuable time has become imperative. Many attempts in the way of Year-Books, Retrospects and Abstracts have been made to meet this growing need, but in nearly all of these the process of condensing has not been preceded by a sifting of the good from the useless, and consequently the reader is presented with a mass of information from which he must select with care and study the items which are useful and reliable.

What the busy physician needs today is a well-told tale of medical progress in all its lines of thought, told in each line by one well qualified to cull only that matter worthy of his attention and necessary to his success. He needs material which shall teach him all that the master of his specialty knows of the year's work.

It is with the object of presenting only such readable and useful material that these volumes are published, and every contributor to the pages

of Progressive Medicine will say what he has to say in an original narrative form, so that every statement will bear a personal imprint expressing not only the views of the author cited, but the opinion of the contributor as well.

To insure completeness of material and harmony of statement, each narrative will receive the careful supervision of the General Editor, Dr. Hobart Amory Hare, whose reputation will everywhere be acknowledged as ensuring practical utility in a high degree. Those associated with Dr. Hare in the production of "Progressive Medicine," include a brilliant gathering of the younger element of the profession, well representing the class which is so energetically contributing to make modern medical history.

With the appreciation of the self-evident utility of such a work to all practitioners, the publishers are enabled to ask the very moderate subscription price of ten dollars for the four volumes.

The publishers offer to send full descriptive circulars and sample pages to those applying for them.

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## NOTES.

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### THE PHYSICIAN AND THE ADVERTISER.

AS SEEN BY THE PUBLISHER.

The spread of literature and science through the daily, the weekly, and the monthly journal, marks the past two decades as wholly unique in educational history; and although the periodical press may never supplant the formal treatise in book form, it has so thoroughly done much of the work formerly done exclusively by books as to make itself indispensable both to the general reader and to the professional man.

In an experience, covering this whole period, as editor and publisher of professional journals, the writer can safely say that he never saw a man of any standing whatever in his profession who did not read one or more of his professional journals, or, even more, who did not occasionally contribute to the columns of such journals. From mere personal organs of editors or proprietors, these journals have come to represent the standing and progress, in their respective professions, of the men in the locality where such journals circulate.

Minnesota and her sister states have taken a high and advanced stand in the matter of professional attainment for admission to practice medicine in these states. Our Minnesota law upon this point was years ago far in advance of the laws of the older states, and it became a model for legislation throughout the country. Our State University was among the first to raise its standard of requirement for graduation in medicine, and to increase the term of study to four

years. The editors and the publisher of the Lancet may not lay claim to much share in this good work because of what they have done; but the Lancet has been the medium through which the men who accomplished these ends, did their work, and it has been a means in the hands of such men for the elevation of the profession in the Northwest. This, in a word, is the history of almost every medical journal that has had the good fortune to share in the progress of the profession.

If the medical journals had done no more than this, they would still deserve much from the profession. We have no reason, by any means, to complain of the lack of support from the profession; on the contrary, we rejoice in, and boast of, the loyalty shown the Lancet by the best men in the Northwest. But, in common with every other medical journal, the Lancet has attained a position made possible, not alone by the direct support of its subscribers, but largely by the patronage of its advertisers; and we, therefore, maintain that the profession is under certain obligations to this body of men. In one respect it is under peculiar obligation to them. The profession demands that the manufacturer shall have neither secret nor patented formulæ, and the reputable publisher makes compliance with this demand precedent to admission to his advertising columns, hence we claim that every physician is in duty bound to respect the property right of the manufacturer in his scientific discovery or in the improved process that gives the profession a better form of remedy or instrument. It is only from such respect that the honest manufacturer can hope for relief from the burden and evil of substitution, and only in such respect can he find reward for his honesty in compounding pure drugs. Duty to one's patients and regard for one's own reputation on the part of the physician ought to make substitution forever impossible, but it requires a high degree of professional pride to root out both substitution and imitation. We believe these evils will grow less just as the profession of medicine grows more honorable.

Again, there is a curious contrast between the successful medical journal advertiser and the successful daily newspaper advertiser, and the physician should not overlook it. The former deals with an educated and conservative class of men, at least in the main. The latter deals with a bargain-hunting, gullible public, of both sexes. The one succeeds only because of the merit of the thing advertised; the other succeeds often because of the "fake" element in what he advertises. The advertising columns of the Lancet furnish abundant proof and illustration of the former statement, but the present issue has a particularly apt illustration. Wholly unsought by us an order recently came from the Mellier

Drug Co. for a large amount of space (two pages in some issues, and one page in others), in addition to the regular half page they have occupied in our columns for many years. Can any one believe for a moment that Tongaline does not possess very great merit when its manufacturers spend so much money to induce trained observers to test it in cases where immediate and lasting results must be obtained and noted by them, in order to give the manufacturers any return for their expenditure? Is not this also true, in a greater or less degree, of all our advertisers? If it is not, our readers lack the judgment and powers of observation necessary to successful work in the profession of medicine. If it is true, our readers will not find our advertising pages, from month to month, without interest and value to them. These pages are an integral part of the Lancet, and, in a measure, their character is determined by the medical profession. The publisher will not admit to them announcements objectional to the paper's subscribers; and, moreover, advertisers will not long fill them with such announcements, because it would not be profitable to do so.

#### FIFTY YEARS OF SUCCESS.

For half a century every lover of plants, for flower or vegetable garden, has known the name of "Vick;" and the pleasure that Vick's seeds have given to millions of people will make the fiftieth anniversary of this house the most notable ever celebrated by a purely private concern.

The Golden Wedding Edition of Vick's Garden & Floral Guide is a work of art. Between its covers, embossed in gold, are more than one hundred pages in the gorgeousness of the coloring of the flower garden. Although too expensive to send out entirely free it is sent to any address, together with a due bill for twenty-five cents' worth of seeds, for 15 cents; that is to say, for 15 cents one gets the Guide, and twenty-five cents' worth of seeds to be selected from the book. This is about like giving away the Guide and throwing in a chromo. Address James Vick's Sons, Rochester, N. Y.

#### W. R. WARNER & CO.

We are sure that no firm in this country stands higher among medical men than Messrs. Wm. R. Warner & Co., of Philadelphia, who have gained the respect, and often the personal esteem, of thousands of physicians by their honorable methods in business and by the excellence of all their preparations. It is with deep regret that we learn of their heavy loss by fire in their home office, a few days ago. The firm occupied a six-story building on Market street, and had it stored with their own preparations from

top to bottom; but, fortunately, they had two laboratories in other parts of the city, and in these and in their New York and Chicago storerooms there is a sufficient supply of their goods to meet immediate needs so that the total loss of offices and store rooms will not prevent the immediate filling of all orders.

The firm has just begun to put upon the market a new tablet known as "Tablet Nervitone," for which they claim most excellent qualities as a nerve tonic. They write of it: "When the indications are for a prescription to correct asthenia, neurasthenia or nerve exhaustion, whether the result of debilitating diseases or excess, we have in Nervitone Tablets a remedy which will give satisfactory results. Being a combination of well known nerve-tonics and stimulants, Tablet Nervitone will fill a wide field of usefulness in physicians' prescribing." Many of the so-called tonics contain coca and other substances calculated to produce that distressing condition termed the "drug habit" which necessitates a continuance of the drug or a withdrawal of the remedy at the expense of great suffering. Tablet Nervitone should be given a trial.

#### THERAPEUTICS OF SALOPHEN.

In a report to the Bulletin Médical, December 21, 1898, on the therapeutics of salophen, Dr. G. Küss concludes as follows: It would appear that salophen possesses great efficacy in a number of pathological states, besides certain effects which seem to belong to it, as in chorea, psoriasis, and affections of the skin attended with pruritus. It is an invaluable substitute for salicylate of sodium, being incontestably devoid of its disadvantages. Although sodium salicylate is endowed with remarkably antirheumatic properties, especially in the severe form of rheumatism, it is sometimes not well tolerated; some patients take it with strong repugnance, while in others having an irritable stomach it is absolutely contraindicated. Under these circumstances it is serviceable to employ salophen as a succedaneum. Both of these remedies are deserving of a place side by side in the therapeutic armamentarium; and while they have their special indications which should be determined more and more precisely, they share common properties which permits of the substitution of the one for the other.

#### INFRINGEMENT—SUBSTITUTION.—AN OLD METHOD (IMPORTED) REVIVED.

An enterprising (?) professed pharmaceutical house of Paris, France, has caused to be circulated in this country a product under the name of Neurosine Prunier, evidently with the hope of reaping the benefit, without cost to themselves, of the well-known and efficient Neurosine

manufactured by the Dios Chemical Co., of St. Louis. It is well for the physicians to be on the look-out, although the importers of this Paris house have agreed to discontinue distributing and at once call in all of this product on the market. Physicians are, however, respectfully requested by the original manufacturers to see that their prescriptions are not substituted and that only the original Neurosine is dispensed, for otherwise satisfactory results will not be obtained. If physicians will report to the Dios Chemical Co. any attempt at such substitution the information will be considered strictly confidential, and the physicians will thereby aid the Dios Co. in stopping this nefarious business. When prescribing Dioivurnia or Neurosine physicians should signify Dios.

#### COMPRESSED AIR IN RESPIRATORY AND AURAL AFFECTIONS.

Compressed air having become an important factor in up-to-date treatment of respiratory and aural affections, all practical improvements in air compressing apparatus are readily appreciated by every progressive physician. The Globe Manufacturing Co., of Battle Creek, Mich., have devoted much time to this work, and have recently brought out a number of valuable improvements in air compressors, receivers, etc.

Their new automatic pressure regulator is being received with much favor. It can be attached to any air receiver, which may then be stored at high pressure which is automatically reduced to any desired extent to suit the work in hand, thus securing uniform results with an economical expenditure of air. This ingenious device is so arranged that at any time both the high and reduced pressure can be read from a single gauge.

The Globe Automatic Cut-off, made by the same company, has many new and attractive features. If further information is desired, write the manufacturers for descriptive circulars.

#### NERVOUS HEADACHE.

There is a constantly recurring form of nervous headache to which females are particularly liable. It suddenly seizes upon its victim without premonitory symptoms, is apparently due to no appreciable cause and continues for hours, finally leaving the sufferer exhausted physically and mentally.

Imperfect excretions, some degree of auto-intoxication, disturbed secretion and perverted metabolic functions are responsible for this condition.

On account of its anodyne properties and its strong eliminative action Tongaline is particularly indicated in nervous headache. Tongaline will not only give prompt relief but it eventually overcomes all tendency to the trouble.

## ORIGINAL ARTICLES.

## CHRONIC APPENDICITIS.\*

BY A. E. BENJAMIN, M. D.,  
Minneapolis.

So much has been written upon appendicitis in the last few years that it would seem necessary to apologize for bringing the subject before you once more. My excuse is, however, that there is still a marked difference of opinion relative to the treatment of certain forms of this disease, that the pathology is not thoroughly understood and that quite frequently the disease is overlooked, especially in the female. The different forms of lesions of the appendix have certain characteristics in regard to the pathology, duration, severity, symptoms, etiology, etc.; nevertheless one variety may merge into another, there being a perfect gradation from the mildest to the most severe; therefore, any classification is only arbitrary. The attempt has been made by many authors, but no classification has been universally accepted.

I have, however, for convenience of study and in order to formulate a correct idea as regards the pathology and treatment of the disease, included in this paper such cases as are manifest by recurrent attacks, a relapse or continual catarrhal inflammation and not the distinct acute attacks of the severe variety.

## ANATOMY.

The appendix vermiformis is an organ the exact function of which is not known. It arises from the cæcum and is posterior to it, as a rule. It is cylindrical in shape, averaging four and one-half inches in length and one-third of an inch in diameter. Its mucosa is rich in glandular and lymphoidal elements. Its muscular or middle coat consists of longitudinal and circular fibers. The peritoneal covering is continuous with that of the cæcum, being incomplete behind at the base. Its blood supply is from a branch of the superior mesenteric. An artery from the right ovary, in females, furnishes additional supply.

## ETIOLOGY.

The causes of chronic appendicitis are many and varied, such as:

Atony of the large intestines,  
Indigestion and constipation,  
Anatomical position and structure,  
Previous attacks,  
Age,

Sex,  
Nationality,  
Occupation,  
Tubercular inflammation,  
Actinomycosis,  
Constitutional disturbances,  
Microorganisms.

Atony of the Large Intestines.—Old typhoid and other ulcers lessen muscular contraction and secretion of mucus and indirectly may lead to appendicitis.

Indigestion and Constipation.—A catarrhal inflammation of the cæcum caused by pressure and stagnation of the bowel contents favors, by continuity of structure as well as by interference with blood supply the development of the disease.

Anatomical Position and Structure.—Its dependent position allows secretions to enter the lumen. If long, it permits of greater extent of inflammation, stricture or twists, the latter two preventing the escape of the products of inflammation; also the proximity of diseased tubes and ovaies in the female. When the meso-appendix is short, strangulation occurs oftener. When the muscular structure is weak, substances are not easily expelled.

Previous Attacks without a doubt leave a damaged or weakened mucous membrane and predispose to subsequent attacks.

Sahl reports a percentage of twenty-eight and eight-tenths of recurrences out of 4593 cases; Price states that fifty per cent. of cases recur; Bryant, eleven to seventeen per cent., but an average of statistics shows thirty-five per cent. of recurrences.

Age.—Turner believes that the wider communication of the appendix with the cæcum favors a greater percentage in adult life; Fitz states that in two hundred and fifty cases, seventy-six per cent. occurred before thirty years of age of all varieties.

Sex.—There is a great variety of opinion as regards the percentage of all classes of cases in the male and female; Murphy, in nearly 800 cases gives 93 to 95 per cent. in males; Price, 70 per cent.; Hartley, 80 per cent.; Hunter McGuire in one hundred and fifty three cases gives an equal percentage; Herman Mynter gives 62 per cent. in the male; W. J. Mayo believes chronic appendicitis about an even thing in males and females; my own cases show about an equal percentage in the two sexes; McBurney gives a percentage of 70 in males, but adds, "I believe that a great many cases in the female are either overlooked or the symptoms are attributed to disease of the ovaries and

\*Read before the Hennepin County Medical Society, February 6, 1899.

tubes." Einhorn denies that males are more prone to the disease. It is my opinion that most statistics giving the relative percentage of attacks in the sexes are too greatly in favor of the males, and that could we accurately estimate all the cases we should find the percentage nearer equal in chronic cases, notwithstanding the fact that the appendix is shorter in females, that it has additional blood supply and that their occupation is one less violent; they are, on the other hand, more subject to indigestion and constipation and there is the possibility of extension of inflammation from the ovaries and tubes.

Nationality.—Americans are more prone to develop appendicitis because of their bad habits in eating and prevalence of dyspeptic troubles causing catarrhal inflammation of the intestines.

Occupation.—An occupation attended with exposure or having a tendency to aid in the development of catarrhal affections of the colon is ascribed as a cause.

Tubercular Inflammation does affect the lymphoidal tissue of the appendix at times and is of a chronic nature, usually extending from the cæcum.

Actinomyces is given by some authors as a possible cause.

Constitutional disturbances, as rheumatism or influenza, do affect the appendix, but many authors question this.

Microorganisms.—The bacilli coli communes are important factors in the development of this disease, being a secondary cause of the most severe types. They are the elements which change the simple chronic or catarrhal cases into the suppurative or perforative class. Absorption of these bacilli by the eroded mucous membrane, on account of previous attacks, is a factor in the relapsing form. *Streptococcus lanceolatus*, *bacillus pyogenes*, *foetidus*, *hay bacillus*, *streptococcus* and many others are sometimes found.

#### PATHOLOGY.

There is no disease of the abdominal cavity which presents such a variety of pathological conditions and necessarily of clinical symptoms as those of appendicitis. Taking a typical case through the various pathological changes as they occur, one of the causes previously mentioned produces a catarrhal inflammation of the appendix. The same changed condition as an inflammation of any mucous membrane occurs, viz: desquamation of epithelium and infiltration of the submucous tissue. Should this inflammation continue, the tenderness will remain and an hypertrophy of the mucous membrane and the muscular tissue occur. An enlargement of the whole organ takes place or granulation tissue forms, which by cicatricial contraction may lead to total obliteration of the appendix. This form

is known as appendicitis obliterans and results in a perfect cure. Perfect recovery from a mild attack takes place if the mucous membrane is replaced, but oftener the process continues; strictures occur in the appendix is filled with leucocytes and foul-smelling secretions.

Swelling of the membrane around Gerlach's valve produces stagnation. The bacilli coli communes are absorbed by the diseased or ulcerated membrane, a local peritonitis with adhesions occurs. The inflammation may subside, the retained secretion again emptying into the cæcum past these strictures, kinks of foreign substances. The individual recovers and is in fairly good health until another attack; this attack may end as the former or progress to the same pathological state as seen in the severe types. Murphy contends that these recurring attacks are often caused by the presence of foreign bodies. Deaver in his new work cites examples, but believes coproliths are the result of appendicitis. The attack may result in several strictures or a club-shaped appendix with a cyst at its extremity.

At times small abscess cavities form in the walls of the appendix, pus fills the lumen of the organ, there being no outlet, rupture occurs and a local abscess or general peritonitis supervenes. The appendix may become adherent to various contiguous parts of the bowel or omentum. A recent case operated upon illustrated this. The tip of the appendix was adherent to the center of the coil of the ileum, which, by a strangulation of the blood vessels, due to the inflammation and exudate, had become gangrenous. It became necessary to resect about seven inches of the ileum and unite with a Murphy button, one end through the ileo-cæcal valve and the other in the end of the severed ileum. The operation was performed during convalescence from the fifth attack. The clinical symptoms accompanying the attacks were those of the catarrhal variety, being very mild and of a few hours duration, excepting the last, in which there was a relapse lasting several days.

Much credit is due Dr. Dunsmore, who was associated with me in this case, for the results obtained.

It is now thirty days since the operation. The button passed on the fifteenth day. The man is on solid food, has no fever and feels good.

At times cicatricial bands, flexions or kinks formed by a local peritonitis (a periappendicular inflammation in contradistinction to the endo-appendicular inflammation which originates from within) extending from the diseased tube or ovary occurs. In these cases the appendix, ovary and tube may be thoroughly united, forming a mass of diseased tissue. This state of affairs was found in three cases I operated upon within the last eight months. We should also remember in females that an infection of the ovary



occurs from a diseased appendix, producing nearly the same clinical symptoms and like pathological change.

I wish to show the pathology by microscopic specimens photographed and presented by Morris, of New York, during the Pan-American Medical Congress at Washington in 1893. You will note the changes which occur during the process of inflammation in the various types. Each one is explained.

In order that a more comprehensive idea may be had of the gross pathology of the appendix during some of these inflammations, I also call your attention to the illustrations in Sajou's "Analytical Encyclopedia of Practical Medicine" and Deaver's work upon appendicitis.

With the microscope, in a few specimens kindly loaned me by Dr. Abbot and in some of my own which I have had prepared, I show you the normal appendix and others indicating the various pathological changes as they occur in the process of the disease.

#### SYMPTOMS AND DIAGNOSIS.

The symptoms of appendicitis may be very obscure or quite definite. Frequently the clinical signs are not sufficiently strong to indicate the serious pathological change taking place. The symptoms of tenderness, vomiting, constipation, tympanites, fever, etc., of the ordinary attacks we are all familiar with, and they need not be considered, as they apply equally as well to the chronic recurring or relapsing variety.

Edebohls was one of the first to explain the method of palpating the appendix in chronic cases. Henry C. Coe of this says, "to palpate the appendix necessitates a high degree of scientific imagination." It is a valuable aid, but not certain. The blood count is not so important in chronic appendicitis excepting where there is an abscess.

The symptoms may be confounded with such diseases as:

- Hepatic or renal colic,
- Indigestion,
- Psoas abscess,
- Cancer of the cæcum,
- Typhoid fever,
- Tubercular peritonitis,
- Coxitis,
- Movable kidney,
- Tuboövarian disease,
- Typhlitis stercoralis.

The diagnosis by exclusion will bring us in nearly every case to certain conclusions, but Greig Smith says "it is impossible to be definite and wrong to be dogmatic at times."

It is the last two diseases in particular to which I wish to call your attention. Knowing the frequent association of appendicitis with tuboövarian disease, the gynecologist should

have positive signs before excluding it. A careful consideration of the clinical symptoms and history of the case and a thorough physical examination will in most instances guide us aright.

Typhlitis stercoralis occurs in elderly people of sedentary habits and is nothing more than impaction of the bowel contents in the cæcum. The pain is due to the pressure of the contracting muscular fibers upon the mass. The mass is doughy and is present in the very beginning of the disease; vomiting and slight fever accompany it. All symptoms subside upon the bowel being thoroughly emptied by a high Noble's enema.

#### TREATMENT.

The treatment of chronic appendicitis depends largely upon the experience and judgment of the physician or surgeon in attendance. Those who have always been successful with medical treatment (never losing a case) may possibly stick to such. The one who has always waited until the subsidence of the acute symptoms before operating may be encouraged to do so in the future. The surgeon who always operates on every case as soon as he gets the chance, and with good results, and a low percentage of losses on the whole, will probably continue.

There is great discrepancy in mortality tables as furnished by physicians and surgeons. Beck believes all cases treated medically would recover by operation and be radically cured, too. Herman Mynter in his work on appendicitis says: "My personal opinion is that perfect recovery never occurs except in the obliterating types or mildest forms which cannot be diagnosed clinically." Willie Meyer holds that an appendix that has been once inflamed must be looked upon as a diseased organ which is apt to give rise to serious trouble at some future time and ought, as a prophylactic measure, to be removed.

The medical treatment of this disease demands but little consideration, excepting when we are to wait for the interval. Calomel, salts, Noble's enema, hot applications, etc., with liquid diet and rest, are all that are needed perhaps. Salicylic acid may be given in the rheumatic form.

The operative technique may be after one's own pet plan. It has been discussed sufficiently upon previous occasions.

Arguments pro and con can be brought forward relative to removing the appendix in chronic cases as soon as seen. McBurney, Price, Hunter McGuire, Richardson, Roswell Park, all believe in operating between attacks, of the mild variety, and not waiting for recurrence. Murphy, Deaver and Carl Beck operate when the case is first seen if the patient's consent is given. I believe a person can best be persuaded, while suffering from an attack, to have the ap-

pendix removed. If delayed, a subsequent attack may prove fatal. Without these considerations most surgeons will, in cases where positive signs of a simple attack exist, an improvement taking place within a few hours, recommend delay and its removal between attacks, as there is less risk of infection by germs pent up in the inflamed appendix.

From a careful review of the literature upon this subject, from witnessing considerable work of the best men in the United States, and from personal experience in treating these cases, the writer believes the following to be true:

1. Nearly all primary attacks of appendicitis leave the mucous membrane in a damaged condition.

2. Each succeeding attack increases the pathological change in and around the appendix, rendering an operation more dangerous.

3. A person having one attack is seldom safe away from a surgeon.

4. A state of fear of another attack exists in such an individual.

5. Valuable time is lost and much suffering experienced during each attack.

6. The mortality is extremely low (almost nil) with experienced and careful surgeons operating in the interim.

We therefore conclude: That chronic appendicitis is a surgical disease.

That practically it is as frequent in the female as in the male.

That it is wrong to discharge a patient treated by medicine as cured.

The rational plan with few exceptions is then to remove the appendix once inflamed, as it offers the only reasonable hope of safety and return to complete health.

### THE INDICATIONS FOR CHLOROFORM DURING LABOR.\*

By L. C. BACON, M. D.,

St. Paul.

On the evening of January 20, 1847, Dr. J. Y. Simpson reported a case of version under ether; and on November 8, of the same year, he proposed and advocated the use of chloroform in the practice of obstetrics.

In America, Dr. N. C. Keep, of Boston, Dr. Walter Channing, and Dr. Henry Miller, of Louisville, early advocated the use of anæsthetics in labor. In both England and America, the opinions of these men were strongly opposed by eminent teachers, and though the use of anæsthetics during parturition is now extensively practised, I believe it is not universally so.

In this day we consider it a part of our duty

as physicians to relieve pain when it can be done without endangering the welfare of our patient. Anæsthetics are our most active weapons in combating the suffering of labor, and they should be used, if they can be without injury, or if they will assist in its favorable termination. Chloroform is preferred by most of those who use anæsthetics because of its more prompt and less disagreeable action and the less quantity required.

Experience has taught me that it is a valuable assistant and that it is frequently contraindicated.

In discussing its uses during labor, I will call attention to the physiological changes in the pregnant woman and to the action of chloroform.

The blood is increased in watery elements, in white blood corpuscles and in the amount of fibrin. It is deficient in albumen and in the proportion of red blood corpuscles. The total volume of blood is increased, i. e. a condition of anæmia, hydræmia and hyperinosis exists.

The increased quantity of blood and the multiplied vascular elements in the pelvis increase the heart's work, and nature compensates by a physiological hypertrophy of the heart. It becomes in the pregnant woman approximately one-fifth larger than in the non-pregnant.

Circulatory disturbances are common during pregnancy. They may be of reflex origin or due to pressure and embarrassed heart's action.

The abdomen is crowded by the enlarged uterus and by an enlarged spleen and liver. As a consequence there is a lessening of the longitudinal dimensions of the thorax, the respiratory action of the diaphragm is interfered with and the function of respiration is carried on chiefly by the action of the thoracic muscles.

Albuminuria is common during pregnancy and more common during labor. Among its probable causes are pressure of the gravid uterus upon the renal veins; increased arterial tension and reflex irritation affecting the secreting action of the kidneys.

Chloroform is a powerful depressant to arterial pressure, even when administered in small quantities. This conclusion has been reached by Bowditch, Minot, H. C. Wood, H. A. Hare, Gaskell and Shore and others, and so far as I know has never been denied.

Gaskell and Shore claim that the cause of the falling pressure is cardiac only. Hare and Thornton claim that the falling pressure is due to both cardiac and vaso-motor changes. Since the experiments of Gaskell and Shore were made by injection and those of Hare and Thornton by inhalation, the conclusions of the latter are probably in keeping with the phenomena of chloroform anæsthesia.

It also exerts a powerful depressing and paralyzing action upon the respiratory centers. This statement is one of the results of the investigations of the first and second Hyderabad commis-

\*Read before the Minnesota Academy of Medicine, February 1, 1899.

sions, of Hare and Thornton and others, as well as of the observation of clinicians.

Chloroform is a lethal agent of great power when brought into contact with highly vitalized tissues. It lessens the oxygen carrying power of the blood, lessens muscular irritability and weakens muscular action. Under its influence sensibility goes first, then intelligence, then the reflexes cease. Arrest of respiration comes next and finally arrest of the heart's action.

Dr. Dönhoff, in the Keil Institute, has investigated the effect of chloroform inhalation upon the contractions of the uterus, and states:

First—Its administration even in diminished doses exercises a retarding influence upon the progress of labor. The muscular pressure sinks one-half of the amount present before its exhibition.

Second—The expulsive force of the uterine contractions steadily diminishes during its exhibition.

Third—The pains besides being weaker are also more irregular and less frequent. (Under profound anæsthesia, I have seen the pains cease).

Fourth—The pains increase immediately after discontinuing the anæsthetic, but the expulsive force seldom reaches the same power as before its administration, for some time. In some cases two hours have elapsed.

Fifth—If the action of the abdominal muscles is slight, it is entirely checked by superficial anæsthesia but soon reappears after stopping chloroform. If the action of the muscles is vigorous in character it continues, but with diminished force. Deep anæsthesia abolishes entirely the action of the voluntary muscles.

Sixth—The intervals between pains become longer immediately after chloroform is administered, and the labor pains besides being less intense, decrease in number 25 per cent.

The results of these experiments are in keeping with the action of chloroform upon muscular tissue. I believe that if carried out more extensively they would show that not all persons are affected to the same degree, though all are affected in the same general way, and we have the expulsive forces retarded with no corresponding diminution of resistance.

The fact that deaths have occurred from chloroform during labor is sufficient reason to assume that its use is not devoid of danger and that it should be administered carefully, and only in response to definite indications. The demand of a patient for chloroform is not a sufficient reason for its exhibition.

It is probable that the phenomena of labor lessen to some extent the dangers to life because the heart is hypertrophied and less likely to weaken; the patient is in the recumbent position; the uterine contractions aid to some extent the

action of the heart and counteract the tendency of chloroform to produce cerebral anæmia. Knowing these things, enthusiasts have exaggerated their importance and the fancied security has in some cases been the cause of carelessness and death. Lusk reports a case in which a cloth saturated with chloroform was held tightly over the mouth of a patient in labor to subdue struggles, and collapse immediately followed.

It should be administered only in a manner that would be considered ordinarily safe in the non-pregnant. Its action carefully watched and the amount carefully graduated to produce the desired effect. Because it depresses the heart's action, when a fatty or dilated heart exists or there is a tendency to syncope, it is dangerous, even in small amounts, notwithstanding the assistance from the uterine action.

When general emphysema exists, the weight of chloroform makes its expiration slow and there is difficulty in causing a change of air in the lungs. In these conditions it is contraindicated.

The respiration is interfered with by pressure during labor, and when chloroform is administered, oxidation is lessened both because of the interference with respiration and because of the action of the anæsthetic in checking the oxygen carrying power of the elements of the blood. This not only increases the exhaustion of the patient, but it is usual when chloroform has been administered to see a tardy attempt to respire on the part of the child; and where the administration has been long continued this condition often becomes a serious problem.

The force of uterine contraction is lessened in proportion to the amount of chloroform given. Even a small amount, the so-called obstetric dose, has this effect, and if given early in labor, or during a prolonged first stage, or when the pelvic canal is not roomy, the depression due to the anæsthetic, added to the exhaustion produced by the prolonged labor, loss of sleep and starvation, will frequently produce a degree of uterine inertia that will necessitate the use of forceps in cases that would otherwise have terminated without.

By the advocates of the use of chloroform in normal labor, it is recommended to give none during the first stage; and during the second stage to give only a few drops well diluted with air at the commencement of a pain. As the presenting part dilates the perineum, the chloroform may be increased until complete anæsthesia occurs as the presenting part passes the vulva; then it should be discontinued.

Let me say that the amount administered as labor reaches its climax should be carefully considered, for with the increased suffering just preceding delivery the tolerance of chloroform is very great, and in our anxiety to relieve the agony of our patient an amount may be admin-

istered that becomes a menace in the condition which immediately follows delivery, i. e. more or less hemorrhage occurs; the circulation is depressed; venous engorgement and cerebral anæmia are present and an alarming collapse may result.

Chloroform should never be given after the completion of labor to an anæmic individual or when hemorrhage has been large or marked depression results.

After the uterus is emptied, if chloroform has been administered it remains relaxed, the sinuses are not closed promptly and firmly, and though hyperinosis exists it does not compensate for the relaxation, and the tendency to flood is increased. Finally the fundus and the patulous sinuses become filled with clot, the processes of involution are prolonged, and the danger of infection is increased. It is well to follow delivery by a dose of ergot in all cases where the anæsthetic has been used. While the dangers of administering chloroform to women in labor are many, carefully given in selected cases it is an agent of mercy that should not be hastily pushed aside. Certain types of individuals are less affected than others, and I have found that in normal cases, progressing favorably, it can be used solely to relieve pain in these types without danger of materially changing the course of labor.

The lymphatic women are large and sluggish, with soft, weak muscles, large amounts of inelastic adipose tissue, and have little courage and vigor. They are usually below par and bear depressants badly, besides being likely to flow profusely; with these patients chloroform is sharply contraindicated in normal labor.

Patients of the nervous diathesis are slight, free from fat, with bones that are small though usually well formed. They are active, energetic and not easily depressed. These are the ideal patients for the exhibition of chloroform. Its use can begin as soon as the presenting part enters the bony canal, and be pushed with increasing vigor until delivery. As the perineum is being distended the patient can be rendered unconscious without material lessening of the expulsive pains.

The sanguine diathesis gives us patients who are usually large and florid, with muscles that are well developed. Arterial tension is high and as age advances the heart has a tendency to hypertrophy and fatty degeneration, and the muscles become inelastic. Young patients of this diathesis bear chloroform well, but it should be used less freely as age advances unless hypertrophy of the heart and weakened blood vessels are present.

Strumous patients are defective in nutrition; the bones are frequently irregular; they have lit-

tle or no adipose tissue and are irritable, with weak muscles. A few drops of chloroform at infrequent intervals and during a pain will give these patients much comfort. Fortunately the fetus is usually small and the few drops necessary to relieve irritability will not increase the duration of labor.

Dark, despondent women of the bilious diathesis are slender; their tissues are dry and inelastic; they are inclined to be whining, with little fortitude in pain. In these cases begin chloroform early in small regular amounts and the patient will soon become courageous and patient and will eagerly follow instructions and assist the uterine contractions. These patients will insist that chloroform increases the strength of their pains and the change in their demeanor will seem to corroborate their statement. The bilious frequently merges into the sanguine, and we have large, steady, persistent people with marked tendency during labor to rigid os and perineum. When the bilious merges into the nervous diathesis, we find active women but great sufferers. We find many of our chronic invalids of this type. Both of these classes are benefited by the use of chloroform from the early stages of labor until the end; even small regular amounts, sufficient to relax spasmodic muscular action and relieve keen pain.

The bilious and lymphatic combination presents to us a helpless creature, whose natural weakness is intensified by despondency. She has heard that chloroform makes her labor easy and she insists upon having it and having it early and in large quantities. To refuse is to add panic to fright, but the difficulty is readily overcome by liberal inhalations of alcohol. Chloroform should not be administered in normal labors with this type.

The sanguine diathesis is frequently blended with the nervous and bears chloroform well. When the strumous is blended with the nervous chloroform can be used freely. When the strumous is merged into the sanguine chloroform can be exhibited freely but should be watched more closely than in the nervous diathesis.

When valvular lesions of the heart are present the increase in the volume of blood and the increased engorgement of the vessels that occurs during the uterine contractions becomes a source of danger. Without chloroform the heart's action becomes labored and irregular and the patient's distress is great, but immediately upon its exhibition the vaso-motor dilatation allows the patient to bleed into her venous system and the vigor of the uterine contractions is lessened. The excess of work thrown upon the heart is removed and the relief to the patient is so evident, that I would as soon think of approaching one of these cases without aseptic precautions as without chloroform.

When disease of the blood vessels is present chloroform should be administered to relieve straining and lessen the danger of rupture.

Albuminuria is benefited even though eclampsia is not present, when the albumen is due to reflex irritation or increased arterial tension, and under its influence, certain French and German investigators claim that the amount of albumen excreted is diminished and sometimes disappears.

When eclampsia occurs before delivery the convulsions are controlled, the exhaustion and the dangers to the heart and blood vessels are averted and the uterine spasms checked, allowing normal contractions to occur.

In certain cases the pain is of such a character that labor is delayed and chloroform at such times hastens delivery and prevents some dangers.

In primipara when pains are severe and the os dilates slowly, the patient becomes worried and weary and nervous irritability and exhaustion follow.

It sometimes happens that intense suffering inhibits proper contractions and inefficient pains result.

In abnormal uterine contractions pain sometimes becomes pathological in intensity, as seen frequently in hysterical women.

During the second stage, particularly if it is long continued, the vulva becomes swollen and irritable, and if the pains are severe the patient frequently cannot be induced to strain.

In all of these cases, chloroform given to the obstetric degree takes the edge off from the pains and gives the patient courage; at the same time the intervals between pains are lengthened and the patient obtains rest. Chloroform should be used to control tetanus of the uterus, spasms of the cervix and to relax a rigid perineum if due to reflex irritation, but it should be borne in mind that a rigid perineum is frequently but an indication of weakened uterine action. In precipitate labor, if the rigid condition of any portion of the birth canal makes tearing probable, chloroform should be administered in quantities to lessen uterine force as well as to relieve pain.

Forceps are applied usually because of uterine inertia, and chloroform should be used to relieve sensibility and allay reflexes, but the tendency to flood should be borne in mind and its use discontinued before delivery.

During version, anæsthesia is required for all sensitive patients. Without it the uterine muscles become tense as the hand pushes in and sometimes the contraction becomes continuous; besides the pain is intense and struggling frequently interferes with the necessary manipulation. It should be discontinued as soon as turning is accomplished.

It should be omitted only when the abdominal and uterine muscles are insensitive and when the cervix is dilated and flabby or when contra-indicated by disease. Chloroform is useful in all cases where it is necessary to pass the hand into the uterus to change presentations.

In foot and breech presentations it is useful in unruly patients, but in the main the benefit as an anæsthetic is doubtful, for the coöperation of the patient and the uterine pains are necessary assistants.

In all surgical procedures during labor chloroform should be used upon the same indications which govern its use in other cases.

#### SUSCEPTIBILITY TO AND IMMUNITY FROM DISEASE.\*

By E. J. DAVIS, M. D.,

Mankato, Minn.

"In the scale of living things man stands at the head, and the unicellular organisms known as bacteria at the foot, and yet, the relations of these microbes to the lord of creation, are more important and more complex than those that exist between man and any other single group of living organisms."

Sternberg states that in the absence of bacteria, or of some other organisms to perform their functions, the continued existence of man upon the face of the globe would be impossible; for it is to their activity in the decomposition of animal and vegetable substances, that organic material stored up as a result of the vital activities of higher plants and animals is returned to the soil and atmosphere after their death.

From this we must conclude that some such provision of nature must exist, otherwise organic life would long since have come to a standstill, caused by the accumulation of those essential elements which go to make up the structure of animal and vegetable tissues.

As a result of the decomposition of such tissues after death, through the agency of bacteria, these elements are released from the complex combination in which they exist and again become available for the nutrition of living plants or animals.

The moment life is extinct, when temperature conditions are favorable, we are told that these destructive processes commence. Hence, we must conclude that animal life is more or less constantly exposed within and without to the pathogenic action of disease germs.

No question of late years has aroused more interest and is of more importance from a practical point of view, than that which relates to the susceptibility of certain animals to the pathogenic action of certain species of bacteria, and the immunity, natural or acquired from such patho-

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genic action which is possessed by other animals.

It has long been known that certain infectious diseases, now known to be of bacterial origin, prevail only or principally among animals of a single species.

Thus typhoid fever, cholera and relapsing fever, are diseases that prevail among the human species, while the lower animals do not suffer from them even when they prevail in epidemic form.

On the other hand man has immunity from many of the infectious diseases of the lower animals, and diseases of this class which prevail among animals are frequently limited to a single species, like the so-called "hog cholera." Again, several species, including man, may be susceptible to a disease, while other animals have a natural immunity from it.

Thus tuberculosis is common to man and to cattle, and may be communicated, they tell us, by inoculation to small herbivorous animals, while the carnivora are, as a rule, immune.

"Glanders," which is essentially a disease of the equine genus, may be communicated to man, while cattle and swine are to a great extent immune. There were two cases of inoculation from this disease in this country, some 10 or 12 years ago, one in Garden City, and the other in Ceresco township, and both of the men died.

In addition to this general race immunity or susceptibility, we have individual differences in susceptibility or resistance to the action of pathogenic bacteria, which may be natural or acquired.

As a rule, young animals are more susceptible than older ones.

In the human species, the young are especially susceptible to scarlet fever, measles and diphtheria, and those who have attained young manhood or womanhood, to typhoid fever, while after forty years of age the susceptibility to tubercular infection is very much diminished.

Bacteriologists tell us that it is a matter of common laboratory experience among the lower animals, that the young of susceptible species may be infected when inoculated with an "attenuated culture," while older animals of the same species are able to resist it.

Considerable differences as to susceptibility may also exist among adults of the same species.

In man, these differences in individual susceptibility to infectious diseases are frequently manifested.

Of a number of persons exposed to an infection, in the same way, some may escape entirely, while others have attacks differing in severity and duration. Aside from the factor of natural immunity, which may be applied to those who escape, there is still another factor which may also bear an important part in their exemption, name-

ly, the healthful condition of their systems, especially their digestive organs.

Exceptional susceptibility and immunity may also be to some extent a family characteristic, or one of race.

Thus the negro race is decidedly less subject to yellow fever than the white, and this disease is more fatal among the fair skinned races living in the northern countries, than among the Latin races living in the tropical or sub-tropical regions.

On the other hand small pox appears to be exceptionally fatal among the negroes. It is reported to be very prevalent and fatal at the present time in certain provinces of Cuba, among Cubans and Spaniards, people living in a subtropical region. If a susceptible community be exposed to the ravages of small pox or kindred diseases, the least susceptible individuals will survive, and may be the parents of children who will be likely to inherit the special characteristics, as regards physique and activity of organs upon which this immunity depends.

The tendency of continuous or repeated exposure to the same pathogenic agent, will evidently be to establish a race tolerance; and we have reason to believe that such has been the effect in the case of some of the infectious diseases of man.

Those of us who lived in Mankato during the diphtheria epidemic in our city nearly two decades ago, which continued for a period of three or four years, were at the time at a loss to know why it should stop when it did, while there were still in the city a large number of people of susceptible age who had not been afflicted with the disease.

With our present knowledge of this vital question of immunity, we are able to solve this apparent mystery of two decades ago, and now conclude that their escape can be accounted for by either natural selection, family characteristics, or, that the continuous exposure to the pathogenic germ of the disease, caused tolerance to it.

Those of our people who lived here then have doubtless often expressed the earnest hope that our fair city should never again be afflicted by such a scourge.

If the thought advanced above, namely, that the least susceptible to the ravages of an infectious disease survive, and in time become parents of children who inherit special characteristics, that exempts them from the disease, has been fully proven, and we believe it has here in Mankato, then are their fondest hopes realized.

Another important point pertaining to this subject is that the potency of known disease germs varies as widely as does the susceptibility of individuals to their specific action. By actual experience it has been learned that the more recently the germ comes from a developed case of

the disease, to which it gives rise, the more virulent it is, also, that the germ of a disease is much more potent when it prevails in an epidemic form than where there are only sporadic cases of it. There is still another point bearing upon this question of susceptibility, namely, that anything which tends to enfeeble the system of an individual renders such a person much more susceptible to the germs of the disease, than if he were in a strong, vigorous and healthy condition; also, that a change of residence, even from one city to another in the same state, renders the newcomer more susceptible to the prevailing diseases in that locality than are persons who have long resided there, and if the change is greater climatically, the susceptibility becomes proportionately greater.

These last points were recently very forcibly illustrated by the enormously large number of men sick among the volunteer troops in the various camps in our country.

There were many factors entering into its causation, but time will allow us to refer, and that briefly, to only one or two of them.

A large percentage of the men constituting the soldiers of our volunteer army, were at the time of their enlistment engaged in some indoor, or light employment, hence, at first poorly equipped for active manual labor.

Compelling all of the men to be on duty the large number of hours that they were, working them so hard early in their enlistment, when not innured to it, in the hot, sultry, malarious climate, naturally tended to weaken, rather than strengthen their constitutions, thus rendering them more susceptible to the germs of the diseases prevailing in their locality.

The commanding officers of the regiments seem to have vied with each other to see which could drill their men the hardest, doubtless thinking they would thereby increase their efficiency, and get them ready the sooner for active service. Had the exigency of the service been such as to require this forced effort upon the part of the men, and had any good resulted from it, I have no doubt but that the service would have been rendered cheerfully, and that there would then have been some excuse for this harsh action upon the part of those in command.

This drilling, I have been told, was carried to such an extreme that the men would fall in the ranks, being overcome with the heat and exhaustion. I believe that had the medical officers serving with the regiments observed closely, the effects of this overwork upon the men, and along other lines, and taken the proper steps to stop or modify it, much suffering could have been averted and possibly lives saved.

The teachings of sanitation and preventative medicine have for the past quarter of a century been brought so frequently and forcibly to the

attention of our profession, that it hardly seemed possible that they could be forgotten, and yet it is evident that they were to a greater or less extent slighted if not neglected in these camps.

I fully appreciate the fact that he who enlists in the army will find, of necessity, conditions very different from what they are in civil life (having served two years and nine months in the field, during the civil war), also, that many of the stories told and reports written of the conditions in these camps, were, undoubtedly, very much exaggerated.

There is still another point that is deserving of mention, namely, the fact of the rapid recovery of the men wounded at Santiago, unfavorable though the environments were, and we must attribute this favorable result to the preparations made by the surgeons and instructions given by them to their men, as to how they were to use the first dressings, also to the application of modern surgical methods in the after dressing of wounds.

When I promised to read this paper, and had selected my subject, our war with Spain had not occurred, so the points referred to above were after thoughts, and yet were so applicable to our subject and impressed me so forcibly, that I could not refrain from speaking of them, and in doing so I have devoted more time to them than I had intended.

We made the statement above that a change of residence, even in the same state, rendered the new comer more susceptible to the diseases prevailing in that locality than are the people who have long resided there, because they have in a measure become immune to the specific germs that give rise to those diseases.

We base this statement on the fact that during the last six or eight years, half a dozen, at least, of our young people, when attending the State University were taken sick with typhoid fever, while members of families that they were living with escaped.

We could give several additional instances, somewhat similar to this, did we think it necessary, but we believe that the mere mention of the matter is sufficient to refresh your memory, and thereby enable you to recall parallel cases that have come under your observation.

We believe that this important matter should receive the careful consideration of the family physician, and that he should make it his duty to instruct members of the families that contemplate a change of residence as to how they can protect themselves against the diseases prevailing in their prospective homes. His obligation does not end here, because there is another class that depend on him, namely, the new comer into his locality, and he should make it his business to instruct them how to avoid the disease prevailing in his field.

Note.—The author wishes to acknowledge his indebtedness to various writers for a large part of the material of this paper. In some instances the other writers have been quoted *verbatim*.

### DIPHTHERIA AND ANTITOXIN.\*

BY H. H. WITHERSTINE, M. D.,

Rochester, Minn.

Scientific investigation during the past few years by Klebs and Loeffler has pretty definitely fixed the causation of diphtheria, and the specific germ discovered and isolated by them is now accepted by all investigators as the true cause of the disease.

In a clinical history leading to a suspicion of diphtheria the bacillus is nearly always found, and when present a clear diagnosis may be made. But when bacterial examination repeatedly made reveals the absence of the bacilli a diagnosis of diphtheria may justly be doubted. Just how or under what circumstances the bacillus develops and becomes virulent we do not know, but that its presence must be necessary in diphtheria can no longer be doubted, no matter how mysterious the appearance of individual or collective cases may seem at times. Spontaneous development of diphtheria is exceedingly doubtful, and I firmly believe every case must have its origin in the communication of the diphtheritic bacilli in some manner directly or indirectly. Bad hygienic conditions and chronic inflammation of the throat may be predisposing causes, but in themselves cannot produce the disease in the absence of the specific germ.

The life of the diphtheritic bacillus is uncertain, but it is known that it may be capable of virulent action after several months existence. The ease with which it may be transported in clothing to distant parts no doubt may account many times for the mysterious appearance of seemingly isolated cases. I have in mind a case of a lady nurse who was sick with diphtheria in a distant city. After her apparent recovery and the disinfection of her clothing she visited friends three or four hundred miles away. In every family where she unpacked her clothing diphtheria developed shortly afterwards. It is a singular fact, too, that virulent bacilli have been found in the throats of persons seemingly healthy, without developing virulent action in those persons. Virulent bacilli are frequently found in the throats of nurses and other members of a family where diphtheria exists, without developing virulent action. These persons, too, seem to be in perfect health and remain

so. It is believed also that the bacilli in the throats of such persons may be communicated to others, and virulent action ensue. I do not know that any satisfactory explanation of this is at hand. I have none to give.

In this paper it is not my purpose to describe diphtheria in detail, as to its symptomatology, etiology or pathology, but more particularly to confine myself to the treatment of this dreaded disease by the use of antitoxin. No therapeutic agent has yet been discovered capable of producing more marvelous results. Its value can no longer be disputed. Several manufacturers have produced reliable preparations and given definite instructions concerning the care of their products. From the very nature of its composition it is plainly important that it be kept in a cool and even temperature; for in this condition it will retain its most active therapeutic value for the greatest length of time. The important points to be remembered in the administration of antitoxin may be enumerated as follows:

First: Secure a reliable preparation that has been properly preserved.

Second: Thoroughly sterilize the instrument used in its administration. It should be boiled before and after its use, and kept surgically clean. The point of injection should be made clean and an antiseptic dressing applied after the antitoxin has been hypodermically administered. The importance of this will be evident when we consider that we are using an animal product, which, in a sterilized condition is a valuable remedy for the relief of a distressing disease, but subjected to decomposing forces in an unclean instrument might operate as an active poison. Therefore the strictest asepsis in the use of this therapeutic agent should never be forgotten. I am thoroughly convinced that some of the failures in the use of antitoxin may be justly traced to a lack of antiseptic precaution in its administration. With this preliminary care, I believe the accidents will be very few, and the death rate in diphtheria materially decreased.

Third: The antitoxin should be used as early after the onset of the disease as possible, in order that the diphtheria bacilli may be destroyed before the condition known as mixed infection occurs. In those cases where mixed infection exists almost from the start, it is doubly important that the remedy be used early. We thus avoid the dangerous effects of the germ product as well as the additional sepsis following mixed infection. Within the first twenty-four to thirty-six hours in the progress of the disease, one dose is usually sufficient, but later a repetition may be necessary in ten to twelve hours if marked improvement has not been secured. Another great benefit arising from the

\*Read in the Section of Obstetrics and Diseases of Children of the Minnesota State Medical Society, June 17, 1898.



early administration of antitoxin is the marked decrease in the complications of diphtheria, especially that of the middle ear. Within the past year I treated a case of diphtheria of a very mild type without antitoxin. A week later was called to see another case in the next house appearing to be far more severe, and administered antitoxin at once. This patient, though taken sick a week later, and more severely, too, recovered first.

This favorable comparison has been noted in several other cases. Therefore I am convinced that patients to whom antitoxin is administered, recover more rapidly than by any other treatment, whether the cases be mild or severe. When diphtheria develops in a family where there are other children, it is my conviction that those exposed should receive the immunizing dose, especially if the disease is of a severe type. The chance for escape from exposure to severe diphtheria is so slight and the danger so imminent, that I regard it as a duty to prevent the extension of the disease if possible. Two years ago I was called to see a case of diphtheria where there were seven other children in the family. The house was large, so I isolated the case, using every possible care to prevent the disease extending to other members of the family; but one after another became sick up to the last two, who received the immunizing dose and escaped infection. This was tried in four other families with like results.

We frequently see cases of laryngeal diphtheria when, at the first visit, the stenosis threatens to terminate life in a few hours. When this occurs intubation should be done at once and antitoxin administered immediately afterwards. Sufficiently early treatment, however, in laryngeal diphtheria will render intubation unnecessary in a larger number of cases than formerly.

In conclusion, we may justly say for antitoxin that it materially lessens the death rate, it shortens the duration of the disease, it greatly decreases the frequency of complications and it renders intubation unnecessary in a greater number of cases. Other remedies that have proved valuable in the treatment should by no means be discarded. But as it was my purpose to speak of antitoxin only, I will not discuss other remedies farther.

I cannot close this paper without urging the great importance of thorough disinfection before quarantine is raised. The throats of the nurse and parents of the sick children will, many times, contain virulent diphtheria bacilli when there is not even a hyperæmia present in the larynx.

I am coming to the conclusion that quarantine should not be raised so long as these germs exist. I have a fear that such germs in the throats of these people may be lurking dyna-

mite, so to speak, turned loose among other people in whom they may be capable of virulent action. Thus it will be seen that quarantine might be totally inefficient and be merely a false protection. I am not prepared to say that antitoxin should be administered to such people, but I am prepared to say that in a few cases where I have so used it, the germ could not be found afterward. I cannot do less than suggest, however, that all such virulent bacilli be destroyed before full quarantine is removed. Further investigation is probably necessary to demonstrate the need of such a procedure. I cannot say that my limited investigation along this line is sufficient to demonstrate the fact, and therefore only give it for what it may be worth, with the purpose of continuing the test until repeated trials shall settle the question beyond a doubt.

#### NOTES ON THE EARLY DIAGNOSIS OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.\*

By A. B. KIBBE, M. D.,

Seattle, Washington.

The writer, referring to the outbreak of epidemic cerebro-spinal meningitis in Alaska, last spring, calls attention to the value of the discovery of the germ of the disease as an aid to early diagnosis.

In a bacteriological study of eight cases occurring in Vienna in 1887. Weichselbaum demonstrated the presence, in all, of a diplococcus presenting peculiarities which served to distinguish it from other similar organisms, and which he termed the diplococcus *introcellularis meningitidis*.

Later, Jaeger published a report of some fourteen cases of the disease in which the same organism was found. In every case the diplococcus was present in the nasal secretion, frequently in nearly pure cultures.

Scherer, utilizing the results of Jaeger's study, applied his findings as a means of diagnosis and in a relatively large number of cases (eighteen) was able to substantiate Jaeger's statement relative to the practically constant presence of the organism in the nasal mucus.

Both Jaeger and Scherer adhere to the belief that infection takes place by way of this organ, and base their belief on the fact above mentioned, as well as the comparatively frequent occurrence of suppuration in the accessory cavities of the nose. Strumpell states that severe coryza frequently occurs at the onset of the disease, a fact which has been observed by others. Councilman, in an admirable paper based on a study

\*Abstract of a paper read before the Washington State Medical Society.

of more than a hundred cases, observed in Boston, lays no stress on the condition of the nose, and does not seem to have studied the secretion extensively. He states that the disease is not contagious, in his opinion, owing to the absence of evidence pointing that way, the cases being widely spread with no indications of contagion being conveyed by those in immediate attendance. While this may be true, the fact that some epidemics have occurred in military garrisons, both in France and Germany, would indicate that the disease is contagious under certain circumstances. Thus out of sixty-three epidemics observed in France, according to Hirsch, cited by Jaeger, forty-three were confined to the military, six principally so, and five attacked both the military and the people in general. Though there may be some doubt as to the contagious nature of the affection, it is clear that every case should be treated as though it were contagious, and the same precaution taken as in other diseases known to be so. In order to do this satisfactorily, early and positive diagnosis is a *sine qua non*. It is not my purpose to enter into a consideration of the general clinical diagnosis of the disease, as this is treated of extensively in every text-book. The bacteriological diagnosis, however, is scarcely mentioned, and in some works gross errors are made in speaking of the exciting organisms.

True epidemic cerebro-spinal meningitis is now generally conceded to be due to the Weichselbaum diplococcus, and though other organisms have been found in meningitis, such cases have been secondary to pneumonia or other diseases, and the meninges were affected as a result, or part, rather of a general infection. Given, therefore, a case with symptoms indicating cerebro-spinal meningitis, finding the Weichselbaum diplococcus in the nasal secretion would be sufficient for a positive diagnosis. Ordinary simple cover-glass preparations from the nasal secretion show the organisms as in the eighteen cases examined by Scherer, in only two was it necessary to resort to culture methods to demonstrate their presence. If reliance be placed on mere inspection of a properly stained cover-glass specimen, we can only be certain in our diagnosis when the organism is found, but as this occurs, as above stated, in at least eighty per cent. of cases examined, its value is apparent, particularly when no bacteriological outfit is accessible. If examinations, both by cover-glass specimens and by culture, of individuals affected with simple acute coryza, should show the presence of the diplococcus in question, in a fairly large proportion of the cases, we might assume that, under certain conditions, exhaustion from over-exertion, insufficient food, etc., might lessen the resistance of the individual to bacterial invasion, and pave the way for access of the germs to the

cranial cavity. That such conditions lessen resistance in animals is a well-established fact. Thus, white rats, which are immune to anthrax, become susceptible to inoculation if exhausted by running on a revolving wheel. This, however, is carrying me beyond the proper limits of my paper; my purpose being simply to call attention to what has been considered an important aid in early diagnosis. My own experience in this disease is limited to two autopsies, and a study of the nasal secretions in four cases. It is scarcely necessary to go into details of the cases on which autopsies were held, further than to state that in both the diplococcus intercellularis meningitidis was found in sufficient number to render the diagnosis certain.

Cover-glass specimens of the nasal secretion were kindly furnished me by Dr. Yocum, of Tacoma, from two cases under his observation. In both the discharge from the nose was excessive. The picture presented in each case was typical. The fourth case was examined by this method, as a diagnosis was not clear at first, but failed to show any of the characteristic organisms; later all the symptoms became pronounced, and the patient died the sixth week of the disease.

W. F., a deck-hand on one of the steamers plying between Puget Sound and Alaska ports, consulted Dr. J. B. Eagleson, April 24, with symptoms indicating cerebro-spinal meningitis. As I had made requests of the physicians of Seattle to furnish me specimens of nasal secretion from suspicious as well as pronounced cases, Dr. Eagleson prepared a cover-glass specimen from the nasal mucus and sent it to me. Examination showed the characteristic diplococcus in fairly large number within the pus cells. The appearance of the specimens was decidedly like that of gonorrhœa, and at first glance one would have said without knowing its source that the pus was gonorrhœal in origin.

The clinical symptoms of this case were those of epidemic cerebro-spinal meningitis of a mild type. Recovery took place within three weeks. The history which the patient gave was that he was in Skaguay harbor twenty-four hours, but was ashore but once, and then for less than one hour. Whether he acquired the disease during that time is doubtful, though possible. On this point the history of one of the fatal cases is of interest. H. M., from Boise, Idaho, started for Skagway on one of the steamers plying between Seattle and that point. The accommodations were wretched, according to his statement, and he suffered from exposure, hunger and seasickness from the day he left until his arrival in Juneau. He was in no condition to travel further, and returned to Seattle. Dr. Horton, who was called in to attend him, suspected cerebro-spinal meningitis, and asked if I would like a specimen of the nasal secretion. Four cover-

glasses were prepared, but none of them showed anything resembling the characteristic diplococcus. Four weeks later death took place, all the symptoms having been developed. The autopsy, as stated, showed the germs in moderate number and the characteristic location within the pus cells.

This patient, according to his statement, was not in Skagway, and must have acquired the disease on the boat. He contracted a cold at the outset of his journey, and the most plausible explanation is that the germs gained access to the cranial cavity through the lessened resisting power of the economy superinduced by bad hygienic surroundings, insufficient or improper food, and exhaustion from lack of sleep, which he said was almost impossible on the bunk assigned to him. The results of my investigations and the frequency with which the diplococcus intracellularis meningitidis is found in ordinary acute coryza indicate, at present, that the organism is occasionally found in otherwise healthy individuals, as it appeared twice in cases of pharyngitis and rhinitis, and once in the coryza, so common in infants. I also, on one occasion, found it in my own nasal secretion, during a slight cold. As a diagnostic aid I think we can safely estimate the value of finding this organism in the nasal mucus of a patient presenting symptoms of cerebro-spinal meningitis as being presumptive evidence of the existence of the disease suspected. As with the tubercle bacillus, its absence is not proof that the disease is not present, nor is its presence a certain indication; it is simply an aid in diagnosis, and, I believe, a very valuable one.

Most of the literature, relative to its connection with meningitis, has been confined to journals devoted to bacteriology, and for this reason is not usually accessible. A brief description, therefore, of its characteristics, methods of staining, etc., may not be out of place.

In shape it resembles the gonococcus very closely, and, like that organism, is found principally within the body of the leucocytes. Usually it is seen in the form of two hemispheres, with the flat surfaces facing one another. Frequently in the form of tetrads or fours, as though division had taken place a second time at right angles to the first. Now and then a capsule can be made out. The size of the organisms is subject to great variation, in the same proportion large diplococci, twice or three times that of the average, being frequently met with. As a rule the larger specimens do not stain as well as those of average size. Stains readily with any of the aniline dyes, methylene-blue, fuchsin, etc. Whether it always stains by Gram's method is not certain. Weichselbaum states that it does not, Jæger that it does, and Councilman found that it did not stain in the specimens he observed. My own experience is that it does not. It is possible that

it may do so under certain conditions and not under others, so that the method is not a reliable one for purposes of differentiation.

In artificial culture media the germ grows only at body temperature, and, according to Councilman, best on Loeffler's serum. On a jar or ordinary serum the growth is scanty, and where cover-glass specimens show but few organisms, no colonies may be developed. Even when seen in abundance, in preparations of the brain and cord, the growth may be confined to but one or two colonies. As a rule, however, the germs are few in number, and even when a large amount of pus is spread on a cover-glass careful search is necessary before a typical picture is obtained. When such a field is found its resemblance to the gonococcus is very marked. In the nasal secretion the germs are said to be more abundant and from my own experience, which has been limited, this seems to be the case. How frequently they are found in other affections, acute coryza, etc., is not definitely established. At present I am engaged in investigating this question, but as yet have not come to a decided conclusion.

According to the Western Clinical Recorder, Dr. F. A. Packard advocates the discontinuance of the use of ergot (or any drug which increases arterial tension) in all forms of hemorrhage, except uterine. Many authorities agree with him in this opinion. Hemorrhage being arrested by the formation of a clot, and the formation of the clot being favored by a sluggish blood stream, he argues that it is irrational to give any drug which increases vascular tension and so hastens the blood current. His experience in the use of ergot lends weight to his theory. For the treatment of medical hemorrhage, he advises the use of drugs which increase the coagulability of the blood, as calcium chloride, and where the seat of hemorrhage is accessible to the direct action of remedies, he uses drugs which by their local action favor clotting, as hamamelis in epistaxis, and vapor of turpentine in hæmoptysis. In suitable cases he uses nitroglycerine, veratrum viride, the intermittent elastic ligature of the extremities and venesection. In hemorrhage from any cause, opium is a valuable drug, because it produces mental and physical rest, while its power of raising vascular tension can be overcome by the use of one of the vaso-dilators.

The antivaccinationists appealed to the Duke of Argyll for help in their propaganda. He replied: "I look upon the effects of vaccination as one of the great triumphs of science, and then I deplore the mania which has set in, as the result of long immunity from disease, which has led to a discreditable and stupid forgetfulness of its cause."

# NORTHWESTERN LANCET.

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## THE STATE HOSPITAL FOR CRIPPLED AND DEFORMED CHILDREN.

The first annual report has just been made of the work done in the free care of crippled and deformed children, pursuant to the provisions of chapter 289, of the laws of 1897, of the state of Minnesota. The attention of the medical profession was called to this law in these columns last summer as it was believed that many cases for which it was the intention of this law to provide would fail to receive its benefits because many of the physicians of the state were ignorant that provision had been made for the free care of crippled and deformed children. Once more are medical men asked to take note of the existence of the hospital and to refer to it for treatment all suitable cases that come to their knowledge. The first year's work was a good one under the circumstances, but the act of the legislature provided for the care of many more patients than presented themselves for treatment, and less than half the appropriation made was expended. It is believed that if all deserving cases were reached the appropriation would be too little rather than too much, but unless a better showing of the needs of the community in this regard can be made another year it is feared that the next legislature will not be as liberal as was the last.

The report is in two parts, one by the Board of Regents of the State University, and the other by the surgeon-in-chief of the hospital. Why the Board of Regents should have been called upon to do the work is something of a mystery, as it

would seem to be little in line with the purposes for which they were appointed. However, the regents accepted the charge and have done their best to carry out the will of the legislature.

As the appropriation was too small to admit of the establishment of a special hospital, the Board of Regents made a contract with the Board of Control of Ramsey county by the terms of which a ward in the city and county hospital at St. Paul was to be set apart for the use of the patients received under the provisions of the law, at a cost of \$3.75 per week for children between two and twelve years of age, and \$4.50 per week for children between twelve and sixteen years, this sum to cover all expenses except medical care and mechanical appliances. Since the contract was made the Board of Control has fitted up a separate building for the children, which is to all intents and purposes a separate hospital.

During the fourteen months covered by the report thirty-five children have applied for treatment. Of these seven were rejected and twenty-eight admitted to the hospital. The rejections were for the most part because the applicants were considered to be incurable and not proper subjects for hospital treatment. The cases admitted were mostly tubercular disease of the joints, and good results were obtained in most of them. Untreated, they must have gone on from bad to worse, ending in an entirely hopeless condition. Seventeen cases remained under treatment in the hospital at the end of the year.

The rules governing the admission of patients to the hospital are appended. It will be seen that they are carefully framed so as to include only those who could not possibly pay for treatment. The nature of orthopædic surgery is such that the patients require careful and constant supervision for a long period of time. Such medical care is impossible where the patient lives at a distance from the physician, and as a result it often happens that the case must be imperfectly treated because the doctor whose services are unpaid cannot afford the necessary time to secure the best results. The services of the surgeons in charge of the hospital are gratuitous, and they are men particularly skillful and experienced in orthopædic surgery. Inquiries and correspondence should be addressed to Stephen Mahoney, Guaranty Loan Building, Minneapolis.

**RULES AND REGULATIONS FOR THE ADMISSION OF CHILDREN TO THE STATE HOSPITAL FOR THE CRIPPLED & DEFORMED.**

Any parent, guardian, relative, next friend or other person desiring to obtain care and treatment for any crippled or deformed child under the provisions of Chapter 289, Laws of 1897, shall proceed as follows:

First. Such parent, guardian, relative, next friend or other person shall make an affidavit stating:

(a) The full name and age of such child and the full names and postoffice address of the parents if living. If neither of the parents is living, then the full name and address of the guardian, relative or other person with whom such child lives.

(b) How long such child has been a resident of the state of Minnesota.

(c) Whether the parents of such child, if living, or the guardian or other person, chargeable with its care and nurture, have sufficient means to provide proper medical care and treatment for such child.

(d) The occupation of the parents of such child, if living, and in a general way what property they or either of them own in the state or elsewhere. If such child owns any property in its own right, the amount and character of the same.

Second. Such parent, guardian, relative, next friend or other person shall cause a thorough examination of such child to be made by some reputable physician who is a resident of and engaged in the practice of medicine in the state of Minnesota. After such examination the physician making the same shall make a certificate in which he shall set forth in detail, what, if any, deformity or crippled condition he discovered about such child, or what, if any, disease the child was suffering from through which it was likely to become crippled or deformed, and shall give a full diagnosis of the case, and shall also state whether in his judgment the condition of such child can be substantially and permanently improved by medical care and treatment. He shall also state, if he shall be informed on the subject, whether the natural or legal guardians of such child are able to provide it with proper medical care and treatment. Such parent, guardian, relative, next friend or other person shall procure from the clergyman of whose church or congregation he is a member, or upon whose administrations he attends, if there be such, a certificate stating whether in his opinion the person or persons whose duty it is to charge themselves with the care and nurture of the child have sufficient means to provide it with proper medical care & treatment.

Third. Such parent, guardian, relative, next friend or other person shall thereupon forward his application, accompanied by the affidavits and certificates aforesaid, to the Board of Regents of the University of Minnesota. The board shall institute such further inquiry as they shall deem requisite or fitting, and if upon the information before them, and upon consultation with the physicians and surgeons charged with the medical care and treatment of such children under the said law and these rules, it shall be considered that such child is a proper subject for care and treatment under the provisions of said law, and the state of the appropriation is such as to justify it, they shall admit it to the hospital for that purpose and notify such action to the hospital.

Fourth. The parent, guardian, relative or other person making application for the admission of any child shall, in case such child is received, bring it to the said hospital, and shall furnish it with sufficient clothing to last at least six months, and when such child is discharged shall come to said hospital and receive it. No child will be received into the hospital whose age is less than two years, nor any whose age is more than sixteen; nor any child who is afflicted with any contagious or infectious disease.

No child shall be admitted to the hospital who shall be under treatment at any other hospital at the time when application for its admission shall be made.

**REPORTS OF SOCIETIES.**

**Minnesota Academy of Medicine.**

R. O. BEARD, M. D., Secretary.

Stated meeting, February 1, 1899, at the Hotel Ryan, St. Paul; the president, Dr. C. G. Weston in the chair.

The Academy was honored by the presence of Hon. John Lind, governor of Minnesota, who attended and expressed his interest in the session.

Dr. F. R. Woodard, of Minneapolis, reported and presented a specimen from a case of extra-uterine pregnancy.

Dr. L. C. Bacon, of St. Paul, presented his thesis, entitled

**THE INDICATIONS FOR CHLOROFORM DURING LABOR.**

See page 104.

The discussion of the thesis was opened by Dr. A. B. Cates, of Minneapolis. He said that, in his judgment, the paper had well covered its subject and that almost every indication and contraindication for the use of chloroform had been mentioned. He would simply emphasize some of the points that had been made.

Chloroform was particularly indicated in cases of precipitate labor, lessening, as it did, the liability to hemorrhage. Although not classically indicated until the second stage of labor, he thought its use permissible, in certain cases, toward the close of the first stage.

Anæmia was to be regarded as a strong contraindication for the use of chloroform in labor, and this prohibition extended, not only to the thin and pale type, but to those who were obese and anæmic.

Anæsthetics were often used too soon in confinement, and the need for the employment of forceps was sometimes traceable to this practice. He preferred ether in forceps cases and in repair operations following delivery. After the use of chloroform, in forceps cases, it was not unusual to observe a tendency to hemorrhage: the uterus, in these events, being exhausted and its muscular fibres relaxed. Chloroform had, of course, a large value in puerperal eclampsia.

Dr. J. L. Rothrock, of St. Paul, said that he wished to refer but to one point bearing upon the possible dangers of chloroform in obstetric practice. His own experience had not been absolutely free from danger signals. He recited two cases, in one of which alarming symptoms had followed its use and in the other of which the patient had died under its administration, during an obstetric operation necessitated by a placenta prævia. Its use seemed justified by the existence of albuminuria. During the use of the Barnes' dilators it was well

tolerated, but, just as labor was completed, the patient died from the chloroform anæsthesia. It was now known that chloroform affects the kidneys as much as ether does, and in cases of albuminuria he believed its use particularly ill-advised, because the patient is always anæmic and the heart's muscle weakened.

Dr. J. Warren Little, of Minneapolis, reported a case of placenta prævia in which chloroform was used during a rapid delivery without apparent harm, but, in which, during a succeeding operation for the repair of a perineal tear, the patient succumbed to the chloroform anæsthesia. He believed that ether should be chosen in these cases.

Dr. J. E. Moore, of Minneapolis, said that the discussion seemed to him to prove over again that we are all creatures of habit in the use of anæsthetics as in everything else. For himself he could not but feel that chloroform was as safe and no safer in labor than in any other condition. He did not think that Dr. Little could establish his contention that ether would have saved his patient. The choice of ether or chloroform seemed to depend very much upon where a physician had been educated.

Dr. C. A. Wheaton, of St. Paul, confessed to the same sort of heresy that Dr. Rothrock had advanced, and was surprised at Dr. Moore's sentiments. It was well established that more deaths occurred under chloroform than under ether. He had had some experiences with chloroform anæsthesia which had shortened his life. He related a case illustrating its dangers.

Dr. Bacon briefly closed the discussion with the reemphasis of certain points made in the paper.

Dr. W. J. Mayo, of Rochester, read a paper of which the following is an abstract:

**PRIMARY TUBERCULOSIS OF THE INTESTINE,  
WITH A REPORT OF SEVEN OPERATED  
CASES.**

Primary tuberculosis of the intestine is a prevalent disease, especially in childhood. Citations from several authorities sustain this opinion, upon which there is, nevertheless, some variance still.

Of 1,006 abdominal operations, undertaken in St. Mary's Hospital, at Rochester, 64 were for tuberculosis. Of this number there were thirty cases of tubercular peritonitis, three of encapsulated tubercular collection of fluid, eleven of tuberculosis of the ovaries and tubes, seven of tuberculosis of the appendix, seven of tuberculosis of the kidney and six of tuberculosis of the intestinal wall. These patients were largely drawn from agricultural districts.

The methods of infection through the mucous membrane, Peyer's patches and the lymph follicles of the intestine demand study, and the various forms which tubercular lesions take and

the association of tubercular with pyogenic processes are to be considered.

The peculiar liability in the child to the production of intestinal strictures by tubercular lesions is pointed out.

Intestinal infection in children is very apt to be the starting point of distribution toward a general infection. A greater resistance is afforded by the adult tissues.

Diagnosis is easy in secondary infection, but often difficult in primary infection of the intestine. The points of differential diagnosis are emphasized. The dominant symptoms are alternating constipation and diarrhœa, colic, urinary irritation, fixation of the uterus, rigidity of the abdominal muscles and undue sensitiveness upon palpation.

The examination of the stools for tubercular bacilli is advocated. The indications for treatment are discussed under two heads: (1) the treatment of the tubercular process; and (2) the relief of mechanical interference with intestinal action.

The disease offers a field for surgical treatment. Curative effects have followed simple incision of the peritoneum. Removal of the cæcum, the ileo-cæcal coil and the ascending colon have been attended with good results. Strictures must be dealt with as radical operations of necessity. Various forms of operation are discussed and the good effects of ileo-colostomy noted.

The wonderful ability of these cases to withstand operative interference is observed and is to be attributed to the chronicity of the disease.

The following is a summary of the cases reported:

(1) Localized tuberculosis of ileum; separation of adherent intestinal coils; secondary operation for fæcal fistula; recovery.

(2) Tubercular ulceration of ileum, causing obstruction; intestinal resection; recovery.

(3) Localized tuberculosis of sigmoid and tubo-ovarian disease; secondary involvement of ileum and bladder; operation; death.

(4) Tuberculosis of cæcum and appendix; operation; improvement. Readmitted, seven months later, with obstruction of the bowels; ileo-colostomy; recovery.

(5) Tuberculosis of cæcum and ascending colon; formation of tubercular abscess; operation; improvement.

(6) Tuberculosis of sigmoid causing stricture; operation for obstruction of the bowels; recovery.

(7) Tuberculosis of the cæcum and appendix; appendectomy; improvement.

Dr. J. E. Moore opened the discussion. He said that he did not doubt that the future would give us much larger knowledge of primary tuberculosis of the bowel than we have at present.

In his experience cases of intestinal tuberculosis had been of a secondary character. He had never had in his practice a case which he thought would justify operation. He referred to an adult case in which the disease involved the sigmoid flexure and the upper part of the rectum and in which he had performed an inguinal colostomy; the patient died from exhaustion following the operation. In Dr. Senn's experience, intestinal anastomosis between a part of the bowel above and a part below the seat of disease had been followed by improvement, the diseased part being left to a state of rest. He had hoped that the essayist would say something upon the differential diagnosis between tubercular and malignant disease of the bowel, both before and after operation.

Dr. A. McLaren, of St. Paul, said that many of these cases of primary and secondary tuberculosis of the peritoneum were overlooked at the time of pelvic operations and only discovered by microscopical examination of the ovaries or tubes. His own experience would agree with that of Dr. Mayo, that a large percentage of cases coming to abdominal operation proved to be tubercular infections. In his personal record of 600 cases, seven per cent. were tubercular. He recited a case of recurrent appendicitis, with obstruction, in which operation revealed a tubercular lesion of the sigmoid flexure. The patient improved after operation, but the obstruction recurred. He had seen cases of tubercular abscess connecting with a fistula in the small intestine. He referred to a case of tubercular peritoneum in which operation, undertaken three years ago, had discovered a general infection. The simple incision then made had been followed by improvement, but a fistulous opening was still maintained. Dr. Mayo had expressed the belief that if silk were used in suturing, fistulæ would close. He had found exceptions to this rule. Tubercular infection of the sinus would sometimes maintain an opening.

Dr. C. H. Hunter, of Minneapolis, recited a case of death, occurring some twelve years ago, in which the autopsy had developed some remarkable facts. A condition of hysteria had been diagnosed before death. Attacks of unexplained abdominal pain had been experienced and had led to this diagnosis. The autopsy showed three distinct rings of tubercular tissue in the small bowel, well above the ileum, reducing the calibre of the bowel to the size of a lead pencil. The patient had died of secondary pulmonary infection.

It seemed to him that the following diagnostic formula might be employed: a patient, affected with tubercular ulceration of the bowel, should give a history of occasional colic like pains, of gaseous distension of the abdomen, of the occurrence of brown, stinking stools, occasionally

marked by blood, and showing the presence of tubercle bacilli. He suggested the propriety of using tuberculin for diagnosis in these cases, referring to his own use of this agent for the detection of small foci of infection in the suprarenal bodies, etc. Intestinal infection was reported to be most common in agricultural countries, where cattle are often infected in large numbers. Since so many unsuspected cases exist, diagnosis should be more securely made by examination of fecal contents and by the use of tuberculin.

Dr. H. Longstreet Taylor, of St. Paul, mentioned his knowledge of a number of cases of primary tuberculosis of the intestine in children, and referred to the frequency of infection occurring through the intestinal nodes. He believed that the presence of intestinal lesions was rare.

Dr. Mayo, in closing the discussion, said that those cases of supposed carcinoma, which were relieved after a simple incision, must be tubercular. He had been interested in the close correspondence of percentages in Dr. McLaren's cases and his own. Referring to the case cited by Dr. Hunter, in which localized lesions were found in the upper part of the small intestine, he said that a larger proportion of cures had been observed in those lesions which are situated high up. Dr. Taylor was under a misapprehension in thinking that he had urged the necessity for a lesion in the intestinal mucous membrane. Infection commonly occurred directly through Peyer's patches without ulceration.

#### THE WESTERN OPHTHALMOLOGIC AND OTO-LARYNGOLOGIC ASSOCIATION.

The annual meeting of the Western Ophthalmologic and Oto-Laryngologic Association, held in New Orleans, Feb. 10 and 11. Owing to the unavoidable absence of the President, Dr. J. Elliott Colburn, of Chicago, the First Vice President, Dr. W. Scheppegrell, of New Orleans, presided. Two joint sessions and three sessions of the Ophthalmologic and Oto-Laryngologic Sections respectively were held and many important papers read and discussed.

The following officers were elected for the ensuing year: Dr. W. Scheppegrell, of New Orleans, President; Dr. M. A. Goldstein, of St. Louis, First Vice President; Dr. H. V. Wurde-mann, of Milwaukee, Second Vice President; Dr. E. C. Ellett, of Memphis, Third Vice President; Dr. F. C. Ewing, of St. Louis, Secretary; Dr. W. L. Dayton, of Lincoln, Neb., Treasurer.

St. Louis was selected for the next annual meeting.

The following names were added to the list of honorary members: Dr. Geo. Stevens, of New York; Dr. St. Clair Thompson, of London;

Dr. P. Coen, of Vienna, Austria; Dr. E. J. Mou-  
ro, of Bordeaux, France; Dr. J. Sendziak, of  
Warsaw, Russia; Dr. Marcel Natier, of Paris,  
France; Dr. C. Ziem, of Dantzig, Germany; Dr.  
A. A. Guye, of Amsterdam, Holland.

The new members elected were as follows:  
Dr. J. A. Caldwell, of McKinney, Tex.; Dr. O.  
Joachim, of New Orleans; Dr. W. H. Baldinger,  
of Galveston, Tex.; Dr. J. S. Mott, of Kansas  
City, Mo.; Dr. J. S. Lichtenberg, of Kansas City,  
Mo.; Dr. J. W. Bettengen, of St. Paul, Minn.;  
Dr. J. W. Chamberlin, of St. Paul, Minn.; Dr.  
H. M. Starkey, of Chicago; Dr. R. Brunson, of  
Hot Springs, Ark.; Dr. Max Thorner, of Cin-  
cinnati; Dr. J. W. Scales, of Pine Bluff, Ark.;  
Dr. E. M. Singleton, of Marshalltown, Ia.; Dr.  
F. C. Ewing, of St. Louis.

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## BOOK NOTICES.

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A Practical Treatise on Fractures and Disloca-  
tions. By Lewis A. Stimson, B. A., M. D.,  
Professor of Surgery in Cornell University  
Medical College, New York, etc. Illustrated.  
New York and Philadelphia: Lea Brothers  
& Co., 1899. (Price in Cloth, \$5 net. In  
Leather, \$6.)

Although Dr. Stimson wrote a two-volume  
work, now out of print, upon this subject, the  
whole has been so largely re-written as to be  
practically a new book and no mention is made  
upon the title page that this is not a first edition.

For although there is much about fractures  
and dislocations that has not changed for centu-  
ries and probably never will any more than the  
descriptions of gross anatomy will change, never-  
theless there have been notable improvements  
and changes in this branch of medical science  
and each year sees something new. As a partic-  
ular illustration, the opening of joints made pos-  
sible by aseptic methods allows intracapsular  
fractures of the head, of the femur and the hu-  
merus to be approached directly and the frag-  
ments nailed together, obtaining union in many  
cases whose treatment would have been regarded  
as hopeless not many years ago. Again the  
use of the X-rays has been a wonderful aid in the  
diagnosis of obscure cases, and has superseded  
the guess work that was alone applicable to frac-  
tures and dislocations in certain subjects and un-  
der certain conditions.

All of the advances of modern science have  
been taken advantage of by Dr. Stimson in his  
work and are incorporated into the classical de-  
scription of these lesions. Perhaps no one thing  
shows the painstaking research with which the  
book has been written better than the large num-  
ber of references to medical books and journals.  
Almost every page has foot notes of this kind,  
and they are of the highest importance as most

that is new in the pathology, diagnosis and treat-  
ment of fractures and dislocations finds its way  
into print first in the pages of a medical journal.

An American Text-Book of Diseases of the Eye,  
Ear, Nose and Throat. Edited by G. E. De  
Schweinitz, M. D., Professor of Ophthalmol-  
ogy in Jefferson Medical College; etc., and B.  
Alex Randall, M. A., M. D., Ph. D., Clinical  
Professor of Diseases of the Eye in the Uni-  
versity of Pennsylvania; etc. Illustrated.  
Philadelphia: W. B. Saunders, 1899. (Price,  
Cloth \$7.00 net, sheep or half Morocco, \$8.00  
net.)

The series of American Text-Books belongs  
to the front rank of contemporary medical lit-  
erature. Their object has plainly been to cover  
the ground fully and completely and they have  
ever attained that object.

The present work is made up of contributions  
from so long a list of writers that it would re-  
quire too much space to quote from it adequat-  
ly. It is perhaps sufficient to say that there are  
in this country few men of mark in any of the  
specialties treated of in the volume whose pens  
have not been employed in the preparation of the  
text-book.

Where one volume treats of the diseases of  
several organs, the study of each of which is a  
distinct specialty, it is interesting to note the  
relative amount of space devoted to the consid-  
eration of each. In the Text-Book diseases of the  
eye occupy 614 pages, those of the ear 158, and  
those of the nose and throat 398. That the eye  
should be far in the lead is to be expected but the  
relatively small space devoted to the ear is rather  
a surprise.

Like the other volumes of the American Text-  
Book series the work has been published regard-  
less of expense, in a form that is convenient in  
size, agreeable to the eye and lavishly illustrated  
both in black and white and in colors. Particu-  
larly good is the lithographic plate illustrating  
diseases of the drumhead.

Medical men in the Northwest will be espe-  
cially interested in the chapter on the physiology  
of the ear, by Dr. Frank Allport, of Chicago,  
(formerly of Minneapolis) and Dr. R. O. Beard,  
of Minneapolis.

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## MISCELLANY.

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### HOSPITAL POSITION OFFERED.

A physician and surgeon is wanted to take  
charge of a hospital situated in a small village in  
the lumber region. The salary is fifty dollars per  
month, with board, washing, etc. The engage-  
ment will be for six months with a possible re-  
newal at the end of that time. This is a good



chance for a competent man. Give qualifications and references and address "Hospital," at this office.

### THE MARCH MAGAZINES.

Harper's for March well illustrates how great is the general reader's interest in accounts of war, for it contains three purely war articles, and they certainly are exceedingly interesting. Senator Henry Cabot Lodge continues his series on "The Spanish-American War;" Dr. John A. Wyeth writes of Major General Forrest at Brice's Cross Roads, where he routed the Union forces; and Simon Pokagon, an Indian chief, whose father was present at the massacre of Fort Dearborn, writes of that historic occasion, presenting the Indians' side of the story. Two other articles in this issue are particularly valuable and interesting; one is by Julian Ralph on "English Characteristics," and the other by Russell Sturgis on "The Building of the Modern City House." But these leading articles are only a part of the good things in this number.

Scribner's Magazine made a ten-strike when it secured a series of war articles from Theodore Roosevelt, not only because of his reputation, but because of his ability to write. As there was nothing in the war to compare with the work of the Rough Riders, so there is nothing in the literature of the war to compare with this account of their organization and work. One cannot fail to see in every chapter of this article just what makes this man the ideal of the American people. He is a man of action, of accomplishment, and of honor. He gives credit where it is due; and if credit is due himself the reader knows it, and yet would not be satisfied not to know it. Next in interest and importance to this series is a series on "The Conduct of Great Businesses." In the March issue, W. J. Henderson tells of "The Business of the Theater," giving figures that will surprise many by their magnitude, and making a very readable article. An installment of the "Letters of Robert Louis Stevenson," and "Some Political Reminiscences" by Senator George F. Hoar, are features, which, together with those already mentioned, serve to show how high a plane this magazine has reached.

The March Atlantic opens with an unsigned article, probably an editorial, on "A Wholesome Stimulus to Higher Politics," and the confidence that the author expresses in the American people is most encouraging. If the war with Spain, and the consequent responsibility placed upon our people, awaken them to a sense of their power, and the power is exercised, the war will have been the most fruitful of good in all history. "Some Cranks and Their Crotchets" is one of John Fiske's best contributions to the Atlantic, and cannot fail to do much toward stemming the

tide of incredulity that sometimes carries even intelligent people into very harmful beliefs and practices. Mrs. Julia Ward Howe continues her delightful "Reminiscences," and Prince Kropotkin gives another chapter of his instructive and charming "Autobiography of a Revolutionist." One of the most important series of articles that have appeared in the Atlantic for a long time is that by William James, entitled "Talks to Teachers on Psychology." The second article appears in this issue. "The Vital Touch in Literature" is, as its name suggests, a study along a line that the Atlantic has pursued from its first issue, and few writers could treat the subject more entertainingly than John Burroughs. "Experiences of a War Censor," by Grant Squires, who was our censor, is entertaining and instructive.

The Outlook presents in its March magazine number a rich table of contents. Its special articles are "The Regeneration of Cuba," by George Kennan; "America and the Far East," by Lord Charles Beresford; "Great Britain's Lawmakers," by Percy Alden; and "American Working People," by Charles B. Spahr. In addition to these particularly noteworthy and interesting articles, there are profusely illustrated articles on "Byways in Porto Rico," by Anne Rhodes; "In March Weather," by Ernest Ingersoll; and "Four Living Portrait Painters," by Elbert Francis Baldwin. Such articles, together with strong departments, make the Outlook a strong rival of the best magazines; but its regular weekly issues are no less interesting. Its review of the principal events of the week, its strong editorials, and its religious department make it an ideal family paper; and that it is appreciated as such a paper is attested by its rapid growth, its circulation having recently passed the 100,000 mark.

The Cosmopolitan opens with an installment of a fine series of articles by the editor. The current article is on "The Building of an Empire." In the series on "Great Problems in Organization," we have this month an interesting article on "Flour and Flour-Milling," in which the great industry of the Northwest is fully treated in both illustration and text. Hon. Thomas B. Reed contributes an essay on "Richard Brindley Sheriden;" and Mr. Grant Lynd describes his experiences "In Southern Spain During the War."

Lippincott has for its complete novel "The Sport of Circumstances," a story of Southern life, by Clarinda Pendleton Lamar—a story that is well told, and sustains its interest throughout in a degree that marks the successful short story. The other leading articles of the issue are "Recollections of a London Lawyer," "Imperialism," "Perception of the Picturesque," and "Chinese Physicians in California."

## NOTES.

### MAL-NUTRITION.

"I am sure the Imperial Granum Food was an efficient agent in restoring the health of a baby boy recently under my care. He was suffering from mal-nutrition with a most persistent diarrhoea. Many foods were tried and discarded, and I was beginning to lose heart, when I happened to think of the Imperial Granum. Its use proved it to be very easily assimilated, and I think it saved the baby's life."—M. D.

### ACUTE CORYZA.

In this unpleasant affection the action of Blennostasine is "magical." It arrests the sneezing and mucous discharge without producing serious after effects. Its superiority over quinine lies in the fact that it is a vaso-motor constrictor. Blennostasine is superior to belladonna, atropine, &c., as a blennostatic, is non-toxic, and can consequently be given in large doses, if necessary, without fear of after effects. It exerts a tonic effect on the vocal mechanism, and is especially valuable in colds of public speakers and singers.

### HIGH COMMENDATION.

There are men in the practice of medicine whose aversion to giving endorsements to pharmacists is so intense that only qualities far out of the common could induce them to utter a word of commendation. A single sentence from such a man is more significant than reams of eulogy from other sources. Of such a character is the following from a physician who enjoys probably the largest practice in Oakland, California. "I have used Angier's Petroleum Emulsion for many years and have found it of great utility in the treatment of debility, especially in tuberculous cases."

### GLYCO-THYMOLINE.

The best representative of its class, in my opinion, is Glyco-Thymoline (Kress), an antiseptic of claret color, pleasant taste, alkaline reaction and non-irritating to raw or mucous surfaces. I have found it a pleasant mouth wash, an effective gargle in pharyngitis and an ideal preparation for the cure of acute and chronic rhinitis. In these conditions Glyco-Thymoline (Kress) will be found to produce the desired result. It seldom fails to cure acute pharyngitis in two days when gargled in full strength or diluted not weaker than 25 per cent. In acute rhinitis it has produced best results when in solution not stronger than 20 per cent. In chronic rhinitis I have used as strong as 50 per cent solution, gradually increasing the strength from 25 per cent.—American Journal of Surgery and Gynæcology for January, 1897.

## NASAL CATARRH.

Dr. T. Pickles, Anna, Ill., writes to the editor of The Medical Summary the following therapeutic results from actual experience:

For sore nose, nasal catarrh, etc., I have used Unguentine for the past three years, and have yet to see the case, where I have used it, that was not cured within a reasonable length of time.

In cases where dry scabs or scales form in the nose, I order to give, say a half ounce of Unguentine, make a small mop with a small roll of absorbent cotton on the end of a small stick, roll the mop in the Unguentine and apply well up both nostrils, at the same time have patient to snuff the nose until the Unguentine can be plainly tasted. Use only once a day, just before retiring for the night. This generally cures within three weeks.

### ACTION OF TONGALINE ON THE EMUNCTORIES.

No matter how well provided a city may be with sewers and drainage, such will never successfully accomplish their purpose unless kept clear by flushing or other proper methods.

So it is with the body. In the physical make-up of man, the emunctories are the sewers which are constantly becoming clogged up by certain conditions.

The retained detritus is bound to have a harmful effect upon the organism at large and the physician is confronted with the problem of eliminating this poisonous material promptly and thoroughly.

From its well-known activity on the emunctories Tongaline will fully accomplish the purpose and the remarkably satisfactory results which have followed its use in such cases have been demonstrated by the clinical experience of thousands of physicians.

### MORE FINE TRAINS.

The traveling public has received another evidence of the desire of the Northwestern Line to give them the best accommodations known to railway management. It comes this time in the shape of new cars on the line between the Twin Cities and Omaha. The public has come to expect such improvements only where competition is sharp, as on the Chicago lines; but the Northwestern has always had the bulk of the business to Omaha and the coast, and this improvement simply shows the road's desire to meet the wants of its patrons. With many roads a monopoly of certain business means that its cast-off cars will do the business; and so it is gratifying to see so marked a departure from a bad rule. This line has never given its patrons service open to criticism, but now it gives service that surprises by its excellence, service that is equal to the best on any road.

## ORIGINAL ARTICLES:

## ALCOHOLISM.\*

By H. L. STAPLES, A. M., M. D.,

Minneapolis.

Ever since Noah, after his tempestuous voyage, planted a vineyard, drank the wine, and was drunken, alcohol in some form has been used and abused by all races of men. The American Indians, long before Columbus left Granada, had various intoxicants; one of them, the Mexican pulque, has come down to our time. The Tartars have bouza and koumiss. The Tunisians have laymi. The South Sea Islanders have a liquor fermented from the cocoanut. The same might be ascertained of nearly all tribes, and peoples, and almost invariably the beverage has a local name, thus demonstrating its local origin. As early as 400 B. C. Herodotus wrote that both mind and body were diseased, following the use of alcohol; and Aristotle said that drinking meant madness.

I may say, in prefacing my remarks, that no malady which we encounter in a medical or surgical way requires more skill, tact, and patience to treat than alcoholism in its protean manifestations. Alcoholism may be defined as a disease of heredity or acquirement—a pathological state caused by excessive use of alcohol, manifesting itself by lesions of the brain, spinal cord, or peripheral nerves. There is a rapidly strengthening opinion at the present time that in a certain sense it is nearly always hereditary. It is not claimed that all alcoholics have a similar parentage; but trace back the family lineage and, together with this disease, we find insanity, epilepsy, chorea, hysteria, morphinism, syphilis, prostitution, pauperism, and crime. All children of inebriates are degenerates, and the disease may be handed down for four generations.

Dr. Holmes wittily remarked that one should select his grand parents with great care, and Professor Lombroso's doctrine of atavism is one of the most interesting productions of the present time.

Says Sir Thomas Brown, in his *Religio de Medici*: "Among thy multiplied acknowledgements lift up one hand to heaven that thou wert born of honest parents, that modesty, honesty and veracity lay in the same egg, and came into the world with thee." Would that all our doctors sprung from similar eggs!

The alcoholic is only a member of a family group; one branch of a decadent stem.

Vigorous, evenly balanced people of good parentage and health very rarely use liquors to excess. Dr. Dercum has thus clearly expressed himself in this regard: "To strictly normal individuals the use of stimulants beyond the limits prescribed by ordinary social usage, is unpleasant and distasteful, and even when, as the result of special social occasions, alcohol is taken to excess by such persons, a disgust for the drug ensues, and leads to a period of relative abstinence."

Too little attention is given by most of us to the matter of heredity. From one intemperate mother in three generations sprung twenty-seven persons; twelve were alcoholics and three morphine habitues. Demme thus writes: "The direct posterity of ten families of drunkards amounted to fifty-seven children, twenty-five died soon after birth; of the remainder, six were idiots, five dwarfs, five epileptics, one each had chorea, chronic hydrocephalus, hare-lip and club foot. Two of the epileptics became alcoholics." I had for a patient an actress who combined with a brilliant mind the least regard for morality in any form that I ever had the opportunity to observe. She had been drinking absinthe for several days, and, to say the least, was somewhat broken up. When I asked her in regard to her habits, she replied: "My father was never sober and my mother a morphine eater. Conceived under such circumstances what can you expect of me?"

Kiernan's history of a degenerate family is in part, as follows: "The offspring of the nymphomaniac daughter and her strabismic, migranous cousin were a ne'er-to-do-well, a periodical lunatic, a dipsomaniac daughter who died of cancer of the stomach, deformed triplets who died at birth, an epileptic imbecile son, a hermaphrodite, a prostitute, a double monster born dead, a normal daughter, and a paranoiac son. This paranoiac married his color blind cousin; their progeny consisted of an exophthalmic daughter, an epileptic with an undescended testicle, a cleft palated imbecile, dead born quadruplets, an idiot and a bleeder."

Yet, occasionally from such ancestry some of our greatest writers and orators have been produced. As Dryden remarks:

"Great wit to madness nearly is allied,

"And thin partitions do their bounds divide."

Says Wood: "Many children of genius have an intellectual life spent upon the borderland of insanity, and a moral history setting them apart from the normal human being, and showing but too clearly the traces of their ancestry."

\*Read before the Hennepin County Medical Society, March 6, 1899.

Goethe, one of the world's greatest poets, dyspeptic and tuberculous, fell in love at fifteen with Gretchen, and worshipped her as Dante did Beatrice; from that time he was never without a passion, and wrote erotic and sensuous songs without number. Victor Hugo's family were nearly all insane, and his finest productions show unmistakable evidence of madness. The father of Lord Byron was a profligate, inebriate army officer, while his mother was ill-tempered and passionate. His uncle, a homicide, was termed the wicked Lord Byron. Byron often sought consolation, like Childe Harold, in the harlot and the bowl, and wrote Don Juan while living with the Countess Guiccioli, a woman whom he had induced to leave her husband.

Poe's father and mother were actors of irregular habits, and the works of this most popular writer of his generation were elaborated in a condition of semi-madness and intoxication. One writer remarks that some are drunkards by choice, and some by necessity.

Only a part of the alcohol taken into the body is eliminated as such: a portion is voided by the urine, and, as we are frequently reminded, by the breath. A certain amount is oxidized, converted into carbonates and serves as an economic food, an ailment d'épargne." In toxic doses it destroys the blood corpuscles and dissolves the oxyhæmoglobin, a part not undergoing combustion acts directly on the cerebro-spinal system giving rise to the various phenomena of intoxication and vaso-motor changes. A healthy person, unaccustomed to liquors, cannot take over one ounce of whisky, and avoid its toxic and depressing effects. Parkes states that one to one and a half ounces of absolute alcohol in twenty-four hours is the maximum amount which a healthy man should take, whether in form of spirits, wine, or beer. As the dose is increased usually mental activity is manifest, caused by dilatation of the cerebral vessels. We may have, however, expansion of the abdominal vessels, followed by cerebral anæmia and sleep. Later the mental faculties weaken, followed by prominence of the imagination and emotions as warm friendship, anxiety for a fight, hilarity, or a lachrymose condition, like a Populist orator over affairs of state.

There is a wide variation in the amount of stimulants which different persons can imbibe without exhibiting the effect. Some get drunk first in their legs, others in their heads. The chief pathological changes may be thus briefly stated. The peripheral nerves and nerve endings are particularly liable to structural changes, as are also the brain and cord. The pia is often thickened, and pachymeningitis is frequently observed. There is œdema of the convex surface of the brain, and effusion into the ventricles. Pure alcohol has been distilled from the brain.

Multiple neuritis is common, more frequent in steady drinkers than periodics, and in women than men. Chronic gastric catarrh almost always exists, and dilatation of the stomach in beer drinkers. I saw some stomachs in the Vienna morgue which on inflation resembled balloons, demonstrating where the numerous quarts of beer were deposited during an evening's conviviality. Hepatic cirrhosis is almost constant, the alcohol acting directly upon the liver cells. Interstitial nephritis is not as frequent as formerly supposed, while the enlarged, flabby, congested kidney is common. A typical chronic croupous nephritis is noticeable about middle life in many. Degenerative changes in the heart and arteries always appear, dilatation, valvular disease, and fatty heart, are the common results. According to Strümpell, who speaks ex cathedra, alcohol is the most frequent factor in producing arterial sclerosis. Glycosuria is common in great beer drinkers, notably in Bavaria. A chronic alcoholic is not a good risk for life insurance and should always be written on the substandard plan, whether he has taken a so-called cure or not.

Alcoholism is by no means as frequent in women. It is observed more often in England, where gin drinking is prevalent. The chief causes are neurasthenia due to lack of nutrition, menstrual distress, the worry of domestic life, and social demands where stimulants are frequently employed to spur the flagging energy. Whiskey and morphine are the popular remedies, taken too often by advice of the physician. Unfortunately alcohol does not so frequently bring sterility as opium, and a diseased, depraved progeny is infused into the community. Psychological derangement, ranging from slightly erratic conditions to maniacal outbursts, are common, owing to the inebriety of women being usually periodic. I know no sadder sight than a woman of culture and refinement crazed with intoxicants. Where every form of intelligent, persistent treatment is without avail, I believe oöphorectomy is in some cases eminently proper. This might cure the malady; it surely would prevent the continuance of the disease in her offspring.

The French women, and a rapidly increasing number of Americans are becoming addicted to liqueurs, starting with *creme de menthe*, then progressing by rapid stages to *benedictine*, *curacao* and *absinthe*. The delirium of women is usually of a noisy, raving type; a refined, charming woman may become profane and obscene, set fires or throw weapons. One woman was committed to jail one hundred and thirty-seven times for being drunk, and when drunk her invariable practice was to smash windows.

With the symptoms of an acute debauch we are all familiar from frequent observation, or, more rarely, personal experience. There exists

a toxic gastritis with irritation of the kidneys and hepatic cells. The urine frequently contains albumen and, more rarely, blood. The conjunctiva and skin are yellowish, the tongue tremulous and heavily coated; there is gastric and hepatic tenderness, nausea, and the classical symptoms of an enlarged head and intense headache.

The constant drinker presents many singular phases. One of the most interesting is that of the solitary drinker. We observe this sometimes in men who apparently lead the most exemplary lives—such as clergymen, temperance advocates, college professors, and literary men. Such men would never enter a saloon, or even drink wine at a social gathering, but in their studies, surrounded by their books, they abandon themselves to the free use of the bottle. Many a grand and noble effusion has evolved from the brain thus stimulated.

After years of indulgence a chronic gastric catarrh, cirrhosis of the liver, or a general paralysis reveals the condition. When the habit becomes known it gives rise to such remarks as "What a brilliant mind has been impaired by drink," or "What would he have been, had he left stimulants alone." This is in a measure wrong: for the fact is that the brilliant rhetoric and persuasive eloquence are brought about by the action of whiskey on a degenerate brain, and the person deprived of this spur to action would very likely be commonplace. Periodicals or drink-storms are much like mania, and are almost all from defective ancestry, as insanity, epilepsy, or moderate drinkers. These drink-storms resemble epilepsy closely, and the intervals usually grow shorter with succeeding years. Sometimes they occur with astronomical exactness, as in one case it occurred every 91 days and two hours; another, every 62 days and four hours. Some get drunk on Saturdays, and attend church on Sunday as a measure of atonement. The proprietor of a large mercantile house would apply himself closely to business for eleven and one-half months, and then go off on a fishing trip with a low character whom he employed to keep him constantly intoxicated for thirteen days, reserving one day and night for sobering up, and preparing for the resumption of his business.

There is no distinct proof that general paralysis is due to alcoholic excess alone, but it is a powerful factor when over-work, intellectual strain, worry, and terrible disappointments exist.

The chronic alcoholic is a most unmitigated liar at all times, and no credence can be placed in his sayings or promises. He is also a coward, but occasionally dangerous, as when he has the delusion that some one is endeavoring to poison him. The sexual delusion frequently gives rise

to uncontrollable jealousy, and wife-murder results. Many a lovely, refined woman has thus been sacrificed by an alcoholic lunatic.

Cerebral automatism has been well established in the minds of scientific observers for years; yet it is almost impossible to have it recognized in the law courts. Somnambulism, epilepsy, catalepsy, the hypnotic condition, and, more frequently, alcoholism are the causes. Persons who are under the influence of alcohol suddenly commit murder or some other crime entirely at variance with all previous conduct. A young man was convicted of murder under the following circumstances: He was unaccustomed to drinking, but went to a barn-raising, drank some hard cider, and later took a drink of gin. He had a pistol, and while wandering aimlessly about, deliberately shot a man. When he recovered he was entirely unconscious of the occurrence, yet did not appear drunk when the shooting took place.

A merchant in an Eastern city was never drunk, but was a heavy wine drinker, which frequently caused intense headache. He drank champagne heavily at the club, and his mind became confused. When he recovered two weeks later, he found he had married a lady acquaintance, visited Boston, Portland, and Montreal, awakening at Saratoga. He drank steadily all the time, his mind appeared clear, and nothing unusual was noticed in his manner or conversation. He applied for a divorce on the ground that he had no knowledge of what he had done. This was promptly denied by the courts, but a settlement was mutually agreed upon. One year later he awoke on the ocean, and found that he had taken a steamer for Liverpool, and was several days from the port of sailing. All he could remember was that he had imbibed quite freely with a friend in Boston, and he ascertained that he had embarked the same evening. I had for a patient a traveling salesman who was drunk for a week, during which time he sold several bills of goods. When he became completely sober he positively asserted that he had no recollection of any event of the past week. The business men whom he called upon noticed that he had been drinking; yet he appeared to understand his business thoroughly, and exhibited his usual manner in securing their orders. He had handled one class of goods for years so that automatically he went through his accustomed routine.

Delirium tremens presents a multitude of phenomena, from the tremulousness, depression of spirits, mental confusion, and the so-called horrors to the wildest mania. It develops usually during a debauch or when the stomach will no longer retain liquor. That a sudden cutting off of stimulants will occasionally precipitate an at-

tack cannot be denied, but if the case is intelligently handled it is a rare accident. The hallucinations are usually those of terror or horror, and sometimes ludicrous, as in a case narrated by Flint, where the patient declared that he could readily sleep if the persons under the bed would stop tickling his fundament with straws. Insects, snakes, toads, rats, spiders, dragons, and wild beasts are frequently imagined to be present. One of my friends would delay sending for me until he saw a rat with a blue tail, which was evidence to him that he was in bad shape. Another would keep his arms outstretched, and declare that he was one of the thieves crucified on Calvary. Persistent insomnia and restlessness are constant features much exaggerated at night. A typhoidal condition is usually fatal, though I have observed recoveries from apparently hopeless conditions. Occasionally the thermic centres appear paralyzed, and a temperature of  $104^{\circ}$  to  $105^{\circ}$  ensues. The patients are very excited, delirious, sweat profusely, and die in a few days of exhaustion. Vomiting is frequently excessive, and the retching is painful to observe. Thirst is intense, but fluid increases the nausea, placing the poor devil in the condition of Tantalus in Hades. Sometimes the patient will be courteous and quite rational, yet the mind will be pre-occupied, and a certain unrest and uneasiness will be observed. A celebrated actor had been drinking several days, and was placed in my charge one morning that he might be rendered fit for the evening's engagement. As there was an advanced sale of \$1,200, the gravity of the case from a financial standpoint became apparent. The liquor was dispensed with at his own suggestion. He was given a hot bath and vigorous massage, followed by hot broths containing the red pepper condiment. Three doses of strychnine nitrate, 1-50 gr. were given hypodermically. Through the day he conversed and joked freely. A drachm of sodium bromide produced a short afternoon nap. On account of his manifest uneasiness and habit of watching the corners of the room. I did not feel sanguine of success. He went to the theatre at the usual time, accompanied by his valet, declaring that he never felt better in his life, and started to make up for the performance. He soon exclaimed that on account of certain odors about the dressing-room, it would be impossible for him to act, and no persuasion could change his determination. I well remember the array on the table at his room when I called an hour later. On the table two bottles of champagne, an equal number of beer, and a quart of whiskey were conveniently arranged, while opposite sat a boon companion, endowed with a royal purple nose. He greeted me in this fashion: "Doctor, I don't need you any more tonight, but come very early in the morning."

I had some curious experiences while surgeon of a national Soldiers' Home containing nearly 2,000 inmates. They would drink anything containing proof spirits, from cologne water to liquid shoe blacking. My druggist was quite intelligent and once had a good pharmacy in New York city which he had lost on account of delirium tremens. He promised me faithfully that he would let the tinctures alone if he could have half an ounce of whiskey three times a day. All liquors and essences, of course, were securely locked up. Our formula for essence of peppermint was one ounce of oil of peppermint and 15 ounces of alcohol. He had just prepared this amount, and before I could lock up the bottles, I was called away by an accident. On my return half an hour later he was collapsed on the floor, and the empty bottle showed that he had swallowed the contents, probably without dilution. An emetic was administered, and he was removed to the hospital. He had all the various acute inflammations mentioned in medical dictionaries, running from stomatitis to cystitis, and was gathered to his fathers on the third day.

One day a painter brought an order from the commandant for a pint of alcohol to cut some shellac. Fearing the result, I had him bring his paint-pot, into which I poured the alcohol. In half an hour he was dead drunk with his lips well decorated with paint.

At one time, having an unusual number in the guardhouse, I inquired of my secretary as to the cause. He replied: "We take Jamaica ginger and beer mixed, and I tell you it makes a hell of a fuddle."

The treatment of an acute debauch consists of an emetic, if the stomach is still supposed to contain liquor; hot baths; calomel, followed by a saline laxative; broths with pepper, and hot milk.

A case of delirium tremens must be carefully examined, especially in reference to the condition of the heart, kidneys, and nervous system. The patient should be confined to the room, and in most cases to the bed. I much prefer a strong, good-natured, even-tempered nurse to strapping or a padded room. The alcoholic is usually not aggressive, or prone to injure others than himself. All liquors should be absolutely interdicted. This has been my rule in hundreds of cases, except in case of pneumonia or great heart weakness; and I rarely am obliged to deviate from it. The continuance of small quantities of liquor does more harm than good, and prolongs the convalescence. Moderate smoking, I allow. If not too weak, a hot bath, followed by a vigorous rubbing, is helpful. Turkish baths are dangerous to persons with dilated hearts, a common occurrence in inebriates.

I have had two cases of heart fracture in Turkish bath rooms, one of the right auricle, the other of the right ventricle.

Emetics should never be employed, owing to the danger of cerebral hemorrhage, or arterial rupture in other localities. For days usually, no food has been taken, and this is of first importance. Hot strong beef tea, to which cayenne pepper has been liberally added, is most excellent. An amount of pepper which would produce gastritis in a healthy stomach is often a beneficial stimulant to the inflamed stomach of a drunkard. Various broths, malted milk, peptonized milk, soft boiled eggs, custard, bovine, liquid beef, milk and Vichy, are all of assistance. I once prescribed liquid peptonoids, and my patient drank a pint bottle to get the effect of the sherry which it contained. All foods should be soft and easily penetrable by the gastric juices.

A drug of great value in quieting the patient and procuring sleep is sodium bromide, and it should be given in large amounts. Never give less than one drachm, but usually two, as the initial dose. This should be well diluted. Years ago I heard Wm. A. Hammond lecture on the diseases of Wall Street, and his advice in such cases was, give 100 grains and repeat in two hours if necessary. I have given one ounce in twenty-four hours with good results. Hydrobromate of hyoscine as an auxiliary remedy is of value, gr. 1-100, hypodermically, repeated but once in two to four hours. Watson, the Macaulay of medicine, strenuously advocated the use of morphine, and since his time no efficient substitute has been found in certain conditions. Where the retching is intense and there is evidence of great pain, I know of no remedy comparable to the injection of morphine. It should be carefully watched, and the quarter grain dose not repeated too frequently. At first it should be combined with atropine, which has a positive effect in allaying the drink craze. Chloral is an efficient hypnotic, likewise a dangerous remedy, which occasionally causes death. Several accidents have come to my notice, and prejudiced me against its employment. In sthenic cases half a drachm, in divided doses, may be safely administered. Digitalis is of benefit in certain cases of weak heart, preferably in the shape of digitaline used hypodermically, or 10 to 20 drop doses of the tincture every three or four hours until the effect on the pulse is noted. The heroic dose of one-half ounce should be condemned. Calomel has a markedly sedative action on the stomach, and is best administered in the form of powder, dropped on the tongue. A certain amount will be absorbed even when the vomiting is frequent and profuse.

Sometimes a patient will feel the impending drink-storm and apply for relief, or more frequently his friends will make the application for him. Certain remedies are valuable in this connection. First, if the patient be plethoric and a hearty eater, a large dose of calomel should be administered, followed by a saline, such as Hunyadi or Rubinat water. Probably the best treatment is to give, hypodermically, strychnia 1-50 gr. and atropine 1-100 gr. three times a day. Quite rarely the atropine dose must be reduced on account of unpleasant physiological action. Sodium bromide is necessary for quiet and sleep. Potassium bromide should be avoided, on account of the depressing action of the potassium salts. For years I have given the acid phosphates as cerebral tonics, and I believe they do good. There is a tremendous loss of phosphates by the urine, and, theoretically, such preparations are indicated.

The question of a permanent cure for alcoholics has been a fruitful subject for discussion, and probably always will be, unless mankind becomes constituted on radically different lines. The home treatment has many disadvantages, and is rarely of benefit. Isolation in a state or private institution for periods of from one to six months holds out the greatest hope for success. We could adopt here, with modifications, the Austrian method, where the inebriate is taken in charge by the state for a limited time, either on his own complaint or that of friends, on much the same plan as in insane cases. Each case is carefully analyzed and as carefully treated.

We annually expend in this state hundreds of thousands of dollars in caring for insane people who never can be any good to themselves or the community, while one-tenth of that amount additional would be the means of rendering hundreds of alcoholics useful members of society. It is a fitting time to advocate the establishment by the state of a hospital for inebriates, located in close proximity to the Twin Cities, and managed by the best talent obtainable, not reformed drunkards or morphine habitues. Many physicians are not aware that in well conducted establishments like that of Dr. Crothers' at Hartford and at Fort Hamilton, N. Y., over 50 per cent of their patients have been temperate for a period of over five years after treatment, and the percentage is rapidly increasing. After the reputation of such a hospital is well established, the psychological effect exerted, quite a factor by the way, will be much greater than that of the various "institutes."

A few years ago Keeley announced his bichloride of gold remedy, and an epidemic of cures ensued. The Dwight hypodermic injection gives an analysis of strychn. sulph. gr. 1-64, atropine gr. 1-128, boric acid, and water. This usually has a yellow label, or is contained in a yellow

bottle, for mental effect. The tonic consists chiefly of compound tincture of cinchona, a little aloin, and chloride of ammonium. Not a trace of any gold salt has ever been found.

Many of the so-called cures contain tartar emetic. This stops the drink craving and also desire for food, and usually keeps the patient busy attending to his stomach and bowels. The liquors furnished at the cure establishments contain this drug, and the patient very honestly states that his system is so changed that he cannot enjoy the taste of liquor.

A few years ago a gentleman of this city desired me to remain with him while he took a bottle of a positive cure. He stated that he knew he would be very sick, which was correct. The evidence of tartar emetic was unmistakable. A few months later he informed me that another bottle would be necessary to complete the cure, which was evident from his condition, but I declined to be present during the ordeal.

Many of these cures are an abomination, being managed by unscrupulous men for the purpose of robbing the unfortunate inebriate, anxious to shake off the terrible octopus which is dragging him down. These vultures are armed and equipped with glowing testimonials, not only from patients, but also from highly moral and philanthropic individuals. There never was a medical swindle so vile that it could not readily induce some constipated old minister or some short-haired creature, masquerading in female attire, to sing pæans in its behalf.

The following is but a single instance of their knavery. A University graduate became engaged to a young lady who had pronounced ideas on the liquor question. Hearing that he had drunk beer with some students, she declared that he must take the cure before the marriage could take place. He lies himself to a so-called cure, and states his case, that frequently he would drink a glass or two of beer, but was never intoxicated in his life. He is promptly informed that treatment is highly necessary to secure him from perdition. He pays his hundred dollars, is injected, and numbered among the redeemed. On making application for life insurance he is promptly rejected, and only accepted after a thorough investigation of the matter.

One of the local cures is managed by a graduate of a fake institution, whose sole ability consists in a Uriah Heep expression of countenance, and a sepulchral voice. When his tartar emetic preparation is swallowed, the recipient sees with a new light, loses the desire for liquor instantaneously, and seeks the seclusion which the bath room grants. His star commendation is from an actress who is a morphine, cocaine, and liquor fiend, and whose present condition is as lamentable as before undergoing treatment.

The Keeley bichloride institutes are by far the best of the lot, and the mental effect produced is very strong, for there is a great fascination about the word gold. Yet the man who wrote a most eloquent and, to him, convincing argument in the North American Review, as to the wonderful action of the Keeley treatment on himself, was found in a New York gutter, dead drunk, two months later, and died soon after. This article added more to Keeley's fame than every thing else combined.

To argue that a man can be entirely rehabilitated in three or four weeks is absurd, and that the medicines administered have a lasting effect, no sensible physician will admit. Moreover, these cases are not carefully examined. One of my patients was treated the prescribed time, all the while being very ill with chills and fever. On his return home a huge rectal abscess was discovered.

One fact should be well known, that many cases recover suddenly without any treatment, the disease having died out, when the man becomes an abstainer from that time. No matter whether he has signed the pledge, taken a cure, or swallowed sugar pills, the craving for liquors has ceased, probably brought about by some cerebral change.

I well remember a New England village character who was embalmed in whisky and hard cider for twenty years. One day he appeared on the street perfectly sober, and to his wondering friends, said that he had made a d—d fool of himself long enough. He was never known to touch liquor again. Man goes through climacteric changes much the same as woman, and at these epochs the disease is most apt to disappear.

Despite all theoretical objections, stimulants will continue to hold a valuable position in the treatment of certain acute and chronic diseases. It is also certain that they are a positive benefit to people past the meridian of life in aiding digestion and sustaining the failing powers. A moderate use of pure spirits, light wine, or beer acts as a useful diuretic, and is beneficial to the comparatively sound kidney of middle life and old age.

Hundreds die yearly from gluttony, and hardly a voice is raised to educate people in regard to this sin of commission. God is just as anxious to remove from this wicked world a man who makes a hog of himself at the table, as to remove another who makes an ass of himself at a bar.

State supervision of the liquor traffic is sure to come, and is now being introduced into some of the smaller European principalities, with remarkable diminution in drunkenness. The reprehensible free lunch and treating are banished, and pure liquors dispensed.



Prohibition is an admitted failure in Maine, Iowa and other states, where it has been incorporated as a law on their statute books. You cannot enforce a law where a majority are against its enforcement. The people of these states are drinking proof spirits, colored with burnt sugar and caramel, and wines soured with sulphuric or an organic acid, much to their detriment. One Hebrew liquor dealer informed me that it really hurt his conscience to ship such poor liquors as his trade in prohibition localities demanded. Possibly by stretch of imagination, you can realize how bad the shipments must have been.

The subject of alcoholic inebriety has been too little understood by most physicians and has not been given the prominence and importance which its gravity demands. It is to be hoped that the next decade will be prolific of great good to humanity by intelligent investigation and scientific treatment of this disease.

#### OBSERVATIONS AT CREDE'S CLINIC, WITH SPECIAL REFERENCE TO THE NEW SILVER SALTS.\*

By W. D. KELLY, M. D.

St. Paul.

I wish to apologize for writing upon a subject which is as yet quite new and perhaps like many other new remedies or preparations has not as yet been sufficiently tried and which may, like scores of other remedies bearing a foreign stamp, be found wanting; it probably occurs every year, month and possibly every day in the year, with a new remedy, a cure-all, after months of experimenting, our patients bearing our experiences with us, we are compelled to discard and to relegate still another wonderful discovery to the old file, never, perhaps, again to be used, much to our chagrin and displeasure. Possibly all new remedies may have some medicinal properties, but fail to be properly placed owing to the cunning and glowing description of a physician's ably worded article bearing on the wonderful panacea for the cure of numerous diseases. Like our home confrères of late years, have our foreign brethren conceived the contagious idea of rushing into print at the least provocation, lauding to the highest and quoting the extensive use of a given remedy in the cure of a score or more diseases, and not forgetting to tell of an extensive and lucrative practice at the same time. Within the past few days we have been brought face to face with genuine new discoveries, color photography, etc. This is an era of progression, prosperity, invention and advancement in all the different branches of science; accordingly it is possible for one to pick from numerous chemical remedies put upon the market from time to

time a chemical or compound which is, as many others have been, certain to meet with success and with the proper amount of skill and labor may develop many marvelous results.

Thus do I, gentlemen, wish to bring to your notice and consideration a few silver salts, which were discovered a few years ago by an American chemist in the east, and later used by Dr. Halstead. They were taken up by Carey Lea, Dr. Crédé, of Dresden, and others, and found to contain antiseptic or germicidal qualities. Silver salts have been used for years with this point in view, and it is a well known fact that on metallic silver you can never make a culture and seldom find a growing colony of bacilli or cocci. The inability to use the metal in a medicinal way, and the corrosive and caustic, poisonous and irritating effect of the different salts of silver, has placed this remedy beyond even the consideration of the thoughtful physician, excepting in very few cases.

Prof. Crédé, Prof. Oscar Von Heyden, Liebreich, Carey Lea, Lottermoser and Meyer have had sufficient experience and skill with the new blue silver or soluble silver to warrant our attention. At the meeting of the Twelfth International Medical Congress, in the section of surgery, Prof. Crédé, of Dresden, read a paper on "The Uses of Soluble Silver and Silver Salts." In surgery and bacteriology they have been thoroughly demonstrated as antiseptic agents. Lactate of silver, known in the arts as actol, a white, odorless, almost tasteless powder, unchanged when kept in a dark bottle, soluble in water 1-15 or albuminous fluid, was found to possess bacteriocidal powers surpassing all other antiseptics, including corrosive sublimate and carbolic acid. The silver salts are non-corrosive, non-irritating and odorless. The citrate of silver (itrol) was found to contain every quality of a good antiseptic; its solubility in water is 1-3800. If an agar-agar or gelatine petri plate be in fact infected or inoculated with streptococci or staphylococci, and a silver catgut suture be placed in the dish, a zone of about one-fourth on either side of the suture will remain free from growth, or if present the growth for a considerable distance about the silver will be destroyed. Silver is, like gold, one of the strongest and best germicides. Cocci are killed in a 1-1000 solution of citrate of silver. Silk and catgut are prepared by Dr. Crédé, as follows. A solution of silver, 1-200, is prepared from the lactate of silver in which the catgut or silk is immersed for a week; it is then removed and hung in the light or the sun's rays until black; it is then placed either in envelopes or in a solution of alcohol, and after drying it is ready for use.

Silver gauze is prepared by immersing the gauze in a solution of metallic silver and packing it into bottles or by sprinkling the silver powder

\*Read before the Ramsey County Medical Society, November 28, 1898.

upon an ordinary cloth, muslin or gauze. Drainage tubes are also prepared in a similar manner.

Unguentum is also prepared from silver. Cr  d   claims that properly made unguentum should dissolve when shaken up with distilled water. Its microscopic comparison with mercurial ointment is convincing as to the exceptionally minute state of subdivision of the particles of metallic silver, which fact allows of its free passage into the circulation through the skin.

Cr  d   has found that his new preparation of argentum colloidalis is the most soluble, and being dissolved in the serum of the blood and albumen of tissue, is recommended especially for subcutaneous injection in septic conditions. Its therapeutic effect is seen in the human subject only in the pure or mixed infections caused by staphylococci and streptococci.

"Inunctions of unguentum Cr  d   give silver access to the lymphatic channels and circulate dissolved in the body. In sterile lymph and sterile blood it remains in the condition of metallic silver. In the presence of pyogenic germs and their toxins it enters into some as yet unknown combination and acts either as a bactericide or as an antitoxic agent. The use of the silver preparation causes no local changes. The inunctions are made morning and evening and no other remedies are employed. Each paper contains from one-half to one drachm of the ointment. The inunction is usually made remote from the site of infection. Lymphangitis, phlegmons, septic  mias, phlegmonous anginas and septic complications of scarlet fever and diphtheria have been treated with good results; in all the cases remarkably favorable effects were apparent in from five to thirty hours. The general condition improved; the fever fell within twenty-four hours and rapid retrogression of the septic process set in. Cr  d   believes that the preparation is a remedy of the very greatest importance, being capable of disinfecting the entire body." It is a notable fact that these inunctions, unlike the administrations of silver salts, per orem, do not cause argyria.

Prof. Oscar Liebreicht, editor of the "Therapeutische Monatshefte," says the soluble metallic silver is in the form of small hard pieces, with a peculiar greenish, metallic luster. It can be triturated into a fine powder; when, however, it is pounded in an agate mortar under strong pressure, it forms a tough, greenish and metallic mass resembling gold in appearance; when the powdered metal is dissolved in water it forms a brownish colored fluid. There is no trace of precipitate in the filtered solution. Mixing with a solution of nitric acid gives a white, cloudy precipitate, which afterwards however clears up completely. The silver can be demonstrated in the usual manner by the use of hydrochloric

acid, the chloride of silver that is formed being soluble in ammonia. That we are dealing really with a modification of metallic silver is readily demonstrated by heating a fragment of the new product on a platinum scoop, when shining, white, metallic silver of the ordinary kind, insoluble in water, is at once formed. The demonstrated specimen of ascitic fluid contains the silver in solution so that there can be no doubt at all of the facts of its absorption and it is free from any poisonous effects. Several grammes in a one per cent solution can be injected subcutaneously, without causing pain.

It is quite natural that a good result may not be looked for in a septic infectious disease when the condition is too far advanced. When the bacteria have reached the glands, the bones, the liver, etc., and have caused abscesses or necrosis, improvement only can be expected when the foci can be reached by surgical interference. It is the same with other remedies. Behring's serum, quinine, mercury, etc., are without beneficial effect in cases where the toxins have had too great an effect upon the brain and heart.

Cr  d   says: "I consider it as absolutely certain, however, that the metallic silver has a very beneficial influence and very often effects a rapid and absolutely surprising cure in recent cases and also in chronic ones, such as low sepsis and furunculosis when secondary changes of vital organs have not occurred."

During my visit in Dresden in January and February, 1898, it was my pleasure to meet Hofrath Cr  d   of the Carola Hospital, and through his courtesies I was enabled to make a thorough investigation of his operative methods and silver treatments. After an introduction to all of his assistants, I was invited, as is the custom, to lay aside my coat and don the white duck suit. The operating room is light, thoroughly equipped with the most recent apparatus, everything clean and inviting in appearance. Prof. Cr  d   was dressed in a white suit as were his assistants.

Case I.—The patient, after being narcotized, was put upon the table and prepared for operation by an assistant about as follows: A general bath if possible, soaping and shaving of the field of operation, rinsing the same with boiled water, brushing or rubbing the same with ether, rinsing with boiled water, brushing or rubbing with lactate of silver solution 1-1000, rinsing with boiled water, covering the neighborhood of the field of operation with linen cloths laid in sublimate water 1-2000 for ten minutes, during and after operation protection of the field of operation with 1-1000 lactate of silver solution, operator and assistants clean hands and arms with soap and water which is followed by cleansing of nails and cutting of same, rinsing with pure lukewarm water, washing and brushing the

hands and forearms with a solution of the lactate of silver 1-1000 after each contact with non-disinfected articles, washing the hands with soap and rinsing with pure water. The operator then proceeded to open the belly in the usual way for a gastro-enterostomy, the Murphy button being used; the severed edges of the wound were lightly dusted with citrate of silver; silver catgut and silk were used; all vessels were tied with silver catgut; the belly was closed with silver and a very small amount of silver powder was dusted upon the incision; a single piece of silver gauze about the size of or a little longer than the wound itself; then ordinary gauze or cotton and bandage.

Case II.—Tibial ulcer cleansed with benzine. It is claimed by Cr  d   that benzine is non-irritating, the patient not appearing to feel any pain whatever when a wound was being cleansed of an old, dirty scab which was covered by a strip of adhesive plaster, it was thoroughly cleaned, scraped with curette and put in readiness for the skin graft; a surface on the upper portion of limb was cleaned and a nice graft taken which completely covered the ulcer. After first dusting a small amount of silver into the wound the graft was applied and covered in the usual way by a single strip of silver gauze. After thoroughly pressing the graft in the wound to expel all semblance of fluid or moisture, it was bandaged in the regular way. This dressing was not removed for several days, and was found on removal to have had a thorough result, no constitutional symptoms of any kind. The portion of limb from which the skin graft was taken was dressed with a modified silver unguentum, and it also got well without any untoward symptoms.

Case III.—A lymphoma of the neck was removed in a similar manner by cleansing in the same manner as above. This tumor was crouching against and occupying the space at the angle of the jaw below the ramus and it seemed to be a question whether it would turn out to be an oscto-sarcoma or not. After removal it was sewed up with silver catgut and after five or six days there could not be found at the point of entrance of the suture any indication of an infection or any disturbance whatever.

Case IV.—A lipoma of the head was sutured with silver suture and dusted with powdered silver and dressed in regular way after the extraction of a few teeth.

Case V.—A large alveolar abscess was opened by an external incision. A solution of citrate of silver was freshly prepared from tablets of convenient size and strength. The mouth wash was a solution of 1-4000 citrate of silver, the cavity being packed with silver gauze.

Case VI.—A foreign body in the knee joint. The joint was scraped and cleaned with a lactate of silver solution in the usual way; the

foreign body was removed and the wound dressed with silver gauze.

Case VII.—Omental sarcoma. Same precaution in preparing patient as in the other belly operation. The severed edges were dusted with silver, cut vessels were tied with silver catgut ligatures, belly sewed or closed with silver catgut, dusted with silver powder, covered with a single strip of silver gauze and plain gauze and bandages. In this case, as in all the others, excepting the abscess, a quick, prompt recovery was made. Many other examples might be added, but these few serve the purpose of clearly demonstrating the method of wound treatment. I might add that dressings do not require to be removed when serum trickles through them, but they should be covered with new dressings. Contact of the secretion with the air does no harm. When inflammatory processes are present it is proper to use wet dressings for the first two or three days, after this insufflation of the citrate of silver and then apply a dry dressing. In changing the dressings ordinary cleanliness only is required.

In injuries with hemorrhage no minute examination of the wound should be undertaken, only portions of tissue that are almost detached should be cut away, and nothing should be removed from the surface of the wound even if it is dirty. Incisions are to be made only when there is very great undermining of tissues. Sutures are to be applied or used only for the purpose of maintaining the parts in apposition. After bleeding is stopped citrate of silver is lightly dusted over the wound and a light dressing applied.

Dr. Cr  d   is Hofrath of a general hospital with but one operating room about twenty feet square. The hospital capacity is several hundred beds. All cases are operated upon on one of two tables in the same operating room. The test of this new treatment under these circumstances is most rigid considering the fact that all cases, septic and aseptically, are forced to use the same operating room. During one morning I saw Dr. Cr  d   make a skin graft on the limb, open a belly, remove a growth from the neck, all in the same morning in the order named. This is a rather unusual procedure. In Europe generally when the belly is to be opened if another operation is to be performed that day, it will follow the belly operation. In visiting the wards and being allowed to examine the cases at first dressing, it was invariably the rule to find primary union, no stitch abscess, no fistular tracts, no sepsis, no dermatitis or disturbance of any kind, no systemic effects, a slight rise in the temperature for the first day or so in a few cases.

A few notes worthy of consideration:

Solutions should be made fresh; a small quantity of gauze is all that is necessary; a small amount of powder to cover the wound; ligatures

must be made as directed; according to Dr. Cr  d  , stains can be washed out with a quart of water containing two drachms of chloride of sodium and one ounce bichloride of mercury.

Dr. Cr  d   is a scientific gentleman and I trust you will assist to forward and perfect his good work and likewise help yourselves and your fellow men.

### THE VALUE, LIMITATIONS AND ALTERNATIVES OF TOPICAL APPLICATIONS IN GYN  COLOGY.\*

BY E. C. DUDLEY, M. D.,

Professor of Gynaecology, Northwestern University Medical School, Chicago.

The principal procedures in local treatment are the hot water vaginal douche, tamponnade, and intrauterine applications.

#### THE HOT WATER VAGINAL DOUCHE.

The choice of the syringe, frequently of the douche, time and length of each application, temperature of water, proper use of bed-pan, position of patient, and persistence in long continuance of treatment are all essential factors.

The good results of the douche will be realized only by the strict observance of the following rules in its application, as laid down by Emmet:

Ordinary Method of Application.	Proper Method of Application.
<p>1. The douche is ordinarily applied with the patient in the sitting posture, so that the injected water cannot fill the vagina and bathe the cervix uteri; but on the contrary, returns along the tube of the syringe as fast as it runs in.</p> <p>2. The patient is seldom impressed with the importance of regularity in its administration.</p> <p>3. The temperature is ordinarily not specified or heeded.</p> <p>4. Ordinarily the patient abandons its use after a short time.</p>	<p>1. It should invariably be given with the patient lying on the back, with the shoulders low, the knees drawn up, and the hips elevated on a bed-pan or rubber sheet, so that the outlet of the vagina may be above every other part of it; then the vagina will be kept continually overflowing while the douche is given.</p> <p>2. It should be given at least twice every day, morning and evening, and generally the length of each application should not be less than twenty minutes.</p> <p>3. The temperature should be as high as the patient can endure without distress. It may be increased from day to day from 100�� or 105�� to 115�� or 120�� F.</p> <p>4. Its use, in the majority of cases, should be continued for weeks, at least, and sometimes for months. Perseverance is of prime importance.</p>

\*Abstract of a paper read before the Chicago Medical Society.

The douche acts as a vaso-motor stimulant and as a cleansing agent.

(a) Vaso-Motor Stimulant. Emmet attributes the good effects of the douche to the stimulating influence of the hot water on the vaso-motor nerves, whereby the dilated, congested vessels are made to contract, the congestion lessened, absorption of morbid products hastened and local nutrition improved. The effect is the same as that of massage after the Brandt method.

(b) Cleansing Agent. In pelvic inflammation, the vagina is a passage way and to some extent a receptacle for pathological secretions which flow into it from the tuerus, Fallopian tubes, pelvic abscess, vaginal mucous membrane, and even the vulva. Unless kept clean, the vagina may become an incubator and a distributing point for bacteria. The value of the douche, therefore, as a means of asepsis, is self evident. When local disinfection is required, the douche may have in solution some antiseptic substance, such as lysol, carbolic acid, corrosive sublimate, boric acid, salicylic acid, or peroxide of hydrogen.

The indications of the douche are chiefly in the treatment of chronic pelvic inflammations. The power of heat to stimulate and contract the blood vessels makes the douche useful in uterine hemorrhage. The disposition to extend its use to the routine treatment of a wider range of pelvic disorders should be discouraged.

There are constantly present in the normal vagina great numbers of lactic acid bacteria (Doderlein) whose function is to render the vaginal secretion acid and therefore to make it an unfit culture ground for about ninety per cent. of all pathogenic bacteria. The washing out of these normal germs and their acid secretion opens the way for infection higher in the pelvis. For this reason, the indiscriminate routine use of the douche in the normal vagina is of questionable propriety.

#### TAMPONNADE.

The principal indications for tamponnade are inflammation and hemorrhage.

(a) Inflammation. Tamponnade in the treatment of inflammation is designed as a means of pressure, as a vehicle for the application of medicinal substances and for drainage. The pressure effect of the tampon is chiefly useful in the treatment of displacements, especially those due to inflammatory causes. This indication is better fulfilled by Brandt's method of massage. As a vehicle for the application of medicaments the tampon has become a routine factor in gynaecology. It is often used as a carrier of glycerine, to cause a watery discharge from the genital tract and thereby to deplete the vessels and overcome congestion. How far the good results attributed

to the tamponnade are due to the curative forces of nature or the associated systemic treatment, is difficult to say. A tampon left in for more than twenty-four hours becomes offensive, and a possible hot bed of infection. It should therefore be removed on the day following its application. Its common, indiscriminate routine use should be discouraged. Its therapeutic value has been much over estimated. If used at all, it should be applied daily. One or two applications a week have little value, except possibly that of suggestion. Drainage of the endometrium for endometritis by means of the intrauterine tampon will be mentioned later.

(b) Hemorrhage. Vaginal hemorrhage may often be controlled by a tight vaginal tampon. It is, however, better to find and secure the bleeding point. Uterine hemorrhage may demand immediate control. The vaginal tampon which is commonly employed is inefficient and cumbersome. In bad cases it usually fails, and the distension of the vagina by a large tampon interferes with the functions of the bladder and rectum, and is the cause of great mechanical discomfort. Intrauterine tamponnade is a more practical, comfortable and effective treatment for uterine hemorrhage. It should be in the form of a continuous strip of aseptic or antiseptic gauze about two inches wide. The cervix having been exposed by a Sims' speculum and steadied by a volsellum forceps, the strip is introduced by a slender dressing forceps or sound. The gauze should be removed daily, as secretions absorbed by the tampon decompose rapidly and become a powerful source of infection.

If elastic pressure is required, fine lamb's wool is superior to absorbent cotton. For other purposes, the continuous strip of aseptic gauze is preferable.

#### INTRAUTERINE APPLICATIONS.

The permanent arrest of a long standing uterine discharge by topical applications to the endometrium is seldom accomplished, because the treatment as ordinarily applied does not reach the disease, and because it is not only not indicated, but is injurious in the vast majority of cases for which it is used. The prerequisites to safe and efficient intrauterine applications are a proper selection of cases and a clear pathological indication and definite appreciation of what the treatment is to accomplish.

The proper selection of cases is arrived at by exclusion. This will lead to the exclusion of at least two large classes of cases: Cases in which the predominant element is local infection, in which there is a distinct purulent discharge from the uterus, in which the endometrium is an abscess cavity, and the uterine mucosa and sometimes the myometrium the wall of this abscess cavity. If there is a systemic element it is relatively insignificant. In such cases direct treat-

ment to the diseased structures is clearly indicated. (b) In the second class of cases the predominant etiological factor is systemic; there may be some degree of infection, but this is not the essential factor and should disappear with the improvement of the systemic condition. The treatment of such cases would be clearly not local but systemic.

For the so-called infectious cases the value of topical treatment has until recently been much overestimated and its dangers underestimated. The milder intrauterine treatment as ordinarily practised is long, tedious and useless. Local treatment, mild or severe, if frequently repeated with indifferent aseptic care, often sets up new infection or carries the old infection to deeper structures. This may dangerously involve the parametric lymphatics and veins, the myometrium, Fallopian tubes, cellular tissue, peritoneum and ovaries.

Intrauterine applications are usually effective in proportion to their energy. Only those which have the power to destroy the diseased structure are capable of arresting the discharge. In doing this, however, they may destroy the endometrium, injure the myometrium and reduce the uterus to a cirrhotic like, cicatricial condition. Sterility and permanent irritability of all the pelvic organs are the natural results. Numerous operations have been devised with but little success, to reopen the uterine canal contracted by the prolonged application of such agents. Contrast this condition with that which follows an aseptic curettage. In the latter condition the healthy abraded surfaces are all ready to reproduce a new endometrium. The routine application of strong caustics to the endometrium is prohibited.

A principal mode of action of electricity is by cauterization, although it is said to have a deeper effect on the blood vessels. Its continued use may arrest the discharge, but it is open to the same objection as other caustics. Its chief value is in the soft, flabby, hemorrhagic uterus, especially in the endometrium associated with myoma. The effects of electricity are not limited to the diseased tissue, but may include healthy structures. Its immediate dangers are greater than those of aseptic curettage. Generally speaking, the method is not approved.

Intrauterine gauze tamponnade has been extensively used for dilatation and drainage in non-operative cases. Increasing quantities of a narrow strip of aseptic gauze are packed into the uterus at successive treatments until the endometrium has become dilated to a diameter of one-third or half an inch. Such dilatation is said to permit easy and thorough intrauterine treatment and drainage, especially capillary, when the gauze is in place. The method in my own hands has been occasionally successful, but

great care is necessary lest the gauze instead of carrying out septic material, carry it in.

Innumerable drugs and chemicals have been lauded for intrauterine medication. Carbolic acid and iodine probably meet the requirements in glandular endometritis so far as topical treatment can meet them. In interstitial endometritis ichthyol, although useful, has not entirely fulfilled its early promise.

#### CURETTAGE.

When the disease is distinctly infectious and chronic, topical and systemic treatment are both inadequate although both may properly supplement surgical measures. The diseased portion of the endometrium must be removed by the sharp curette. If this operation is thoroughly performed so as to remove the most infectious portion of the endometrium it is relatively free from danger, offers a reasonable prospective relief and the curetted mucosa is rapidly reproduced.

The treatment of infectious endometritis, even with the curette, is not uniformly successful. Dilated and obstructed blood vessels cannot always be restored to their proper calibre; disorganized lymphatics, nerves and glands can not always resume their normal function, and regeneration of lost structures is not always possible. In the glandular forms of endometritis the sharp curette offers both a symptomatic and histological cure, but when the disease has progressed to the atrophic stage and the endometrium is physiologically destroyed, only a degree of symptomatic cure is possible. When the endometritis is complicated with extensive chronic and obstinate pelvic infection, the uterine discharge will persist regardless of curettage or any other intrauterine treatment, and hysterectomy may be the only way to relief.

The danger and uselessness of topical treatment for the strongly infectious cases is so manifest that few scientific physicians today place great value on its use. The situation is, however, quite different in the second class of cases in which certain systemic conditions are not only the predisposing but the essential etiological factors. These conditions find their chief expression in stagnation of the general circulation; the stagnation is usually associated with disorders of the heart, lungs, liver and kidneys, and is often found with the uric acid and other diatheses such as anæmia, leukæmia, chlorosis, diabetes, gout and rheumatism. The discharge may come also as a sequel of some acute infectious disease such as enteric fever, scarlatina or diphtheria. Not only the endometrium, but the mucosa of other organs shares in the general condition and become less resistant and consequently more liable to infection.

The uterine catarrh is sometimes apparently a vicarious act. I have frequently noticed the cessation or material diminution of a fœtid uterine discharge upon reëstablishing of the normal functions of the bowels and kidney. Inconsistent as the statement may appear, topical treatment in this class of cases which clearly do not call for topical treatment at all, has commonly been followed by the best results.

When diligent use is made of topical applications and a cure is effected, it is quite natural to give the credit to that treatment when in reality the cathartic pill perchance may deserve it. Or, in other words, a case of this class may recover in consequence of the proper systemic treatment or of the curative forces of nature, in spite of the associated topical treatment which it did not need and which may even have done harm.

There is a common impression that severe infectious cases should be treated surgically, and that mild non-infectious or slightly infectious cases should be treated by topical applications. I would take exception to the latter part of this statement, and say that those cases that are not surgical are generally medical. The endometrium has suffered a vast amount of sometimes mild, generally useless, oftentimes destructive, topical treatment. The uterus has endured an immense amount of abuse and the absurdity of topical treatment to the endometrium in such cases is evident when we consider that the uterine catarrh is only one of many local evidences of a general condition. A large proportion of the cases belong rather to internal medicine than to gynæcology.

The systemic therapeutics which apply to the various conditions under discussion include general and sexual hygiene, dress, dietetics, care during menstruation, tonics, regulation of the bowels, bathing, and above all, exercise. If we except the clearly infectious cases some simple treatment such as one-twentieth of a grain of calomel three times a day with enough mild saline to keep the bowels regular, supplemented by three or four miles of daily walking, will cure the vast majority of cases of endometritis.

If the above premises are true, it follows that a very large proportion of the women who formerly crowded the reception rooms of the gynæcologist for intrauterine and other local treatment should be treated by medical or surgical means or by both combined. If they do not present well defined indications for surgical treatment, they should generally be referred to the field of internal medicine. The legitimate field for routine topical applications and gynæcology is limited.

It is not my deliberate purpose to condemn unreservedly the conventional topical treatment. I have in years gone by used the vaginal douche, the swabbing of the uterus with medicated cot-

ton, the injection of astringents, the vaginal and intrauterine applications of dry powders, intrauterine pencils of various stimulating and caustic substances, wool-glycerine tamponnade in the vagina, electricity and intrauterine gauze tamponnade. The diligent and patient use of such measures was followed by much disappointment and some positive harm.

Topical treatment should seldom be long continued. It has a more legitimate place as a supplement than as a substitute for systemic and operative treatment. A reproach will be lifted from the medical profession when finally its indiscriminate and frequent use shall have been relegated to the dark ages of gynæcology.

### THE EXAMINATION OF SICK CHILDREN.

BY W. STUART LEECH, M. D.,

Brooken, Minn.

Diseases of children are generally a great bugbear to the average physician, and frequently cause him great annoyance, and the utmost anxiety to the distressed parents. I dearly love this class of patients, and have taken two special courses of study in this line; children being my favorites, 'tis to their trade to cater.

A famous author spoke well when he said nineteen-twentieths of our practice is among the women and children. If we are making a living out of our profession, the best of the cases cannot be ignored or treated carelessly with impunity. When your hand lifts up the sickly babe or enters the mother's vagina you have the practice of the whole family.

The preëminent cause of so much failure in our practice among infants is the neglect of detail. Even if they are small and speechless is no reason why they should not receive the same amount of attention as the adult.

If you are called by a member of the family to see a sick child for the first time, inquire what ails the child, and you will generally receive their opinion, which to say the least, will give you something to ponder over before reaching the residence. Be on your guard for any unsanitary surroundings about the house. On entering the sick room do not fail to notice everyone present, and if the child is asleep don't disturb it, but keep your eye on it while the history is obtained from the mother or nurse.

First, take a general view of the sleeper as if from afar; then on inspection note the rate and character of the respiration, see what position the hands and feet are in, and notice if there is any jerking or twitching of any muscle. See if there is any retraction of the head, and do not forget that muscular twitching indicates irritation somewhere. Look at the closed eyes and see if there are any dark lines in the infra-

orbital region; if so be on the alert for respiratory trouble. If there are parallel lines on the forehead, and crow foot lines leading from the temples to the orbits, watch for brain trouble. See if the cheeks are flushed; if only one, perhaps, some digestive or nervous disturbance is present, if both show the color, phthisis, pneumonia or some other fever is before you. Do not overlook any eruption on the face or head. From the cheeks, bring your eye to the wings of the nose, and see if they are dilated, or pinched and thin, and if there are distinct lines leading from them downwards and outwards you can be sure of an acute disease, perhaps of the lungs. Look at the mouth and see if the lips are moist, red, parched, chaffed or covered with saliva, or sores; if red, you have an acid alimentary tract. If the lines or furrows coursing from the corners of the mouth are long or well marked your trouble is, perhaps, in the small intestines. Remember: contracted brow, pain in the head or face, elevation of the upper lip, pain in the belly, crying when moved indicates rheumatism, sore on the body or the pricking of a pin.

A suffering child, under seven years of age, will invariably point to the belly when asked to locate the pain. If the infant is young, count the pulse at the anterior fontanelle; while doing this see if there is any bulging. If the child is awake and crying you can not feel his pulse, but put it to the mother's breast and take your position in the rear. Note the condition of the hair; if it is ashy and dry there is an indication for salt or iron, unless the head has been subject to frequent baths.

If your little patient is still asleep, gently lift up the robes and place your thermometer between the legs or in the axillary space, and be careful that the skin surrounds the instrument. If the weather is hot and these spaces are cold on account of exposure, take the temperature per rectum. Note the condition of the finger nails, for they may show constitutional disturbances.

Do not overlook that mode of expression, the cry, for any expert should be able to diagnose, while blindfolded, fourteen distinct diseases from it alone. See if there are any teeth, whether dentition is early or late. Do not overlook Hutchinson teeth. In viewing the tongue, let him cry, for you can act quickly and see better. While looking at the tongue do not let the tonsils, uvula or buccal cavity escape your notice.

In making your diagnosis, do not jump at conclusions, and if you are not yet perfectly satisfied in your examination, listen not to the mother or grandmother, but denude your child and study his development, taking careful notice of his feet, limbs, hips, spine and abdomen.

Remember that a child's abdomen protrudes more than an adult's. See if the portal system

of veins underneath the skin can be seen plainly, or perhaps, the skin or cornea shows a trace of yellow; if so, you have found your Klondike. Take notice of the cervical glands and genitals, any erythematous redness, a concealed hernia (which may be the cause of the cry), or a green stain on the napkin. Ascertain all about the fecal matter, if micturition causes crying. Your examination is not complete if you have failed to inquire of the occurrence of vomiting. If possible inspect the matters ejected. Take note of any cough, but do not ask the mother if her infant expectorates.

Remember that earache or headache will generally cause the child's hands to be thrown in that direction. Pain in the throat causes it to tear at the mouth when crying. Constipation or an irritating foreskin induces playing with the genitals.

It is well to inquire how the child was yesterday, the day before, a week, or a month ago. Do not place much reliance on the history. The mother may be the source of all the trouble; inquire into her health and habits. If the infant is being brought up on the bottle, remember, you are the commissary general. Do not give the baby a bolus, pill, gargle, or any nauseating medicines. Make the dose palatable, and for heaven's sake don't put a blister of any kind on an infant.

Do not overlook the pupils or the condition of the skin. Take your time and be thorough.

## HOSPITAL AND CLINICAL MEMORANDA.

### REPORT OF A CASE OF RUPTURE OF THE BLADDER, BOTH INTRA- AND EXTRA-PERITONEAL.

By J. E. ENGSTAD, M. D.,

Surgeon to St. Luke's Hospital.

Gilbert H., a farmer living five miles north-east of East Grand Forks, Minn. In September, 1897, I was called early one morning to the patient's residence. The party who brought the order informed me that the patient was suffering from colic incident to alcoholism. Being very busy at the time I was unable to respond at once, and it was about ten o'clock before I reached the patient. I found him lying on the floor near the door, suffering the most agonizing pain that it has been my lot to observe in all my practice. He complained of being unable to pass urine, and stated that he had not passed any for nearly twenty hours. I learned that he had commenced drinking beer at two p. m., and as far as he can remember he had not voided any urine until the time of the accident.

Returning from East Grand Forks, about eight p. m., when about a mile from his home

he stood up in the wagon and tried to urinate. The horses gave a sudden pull at the wagon just as he arose from his seat, throwing him over the wheel of the carriage, the pubes striking the edge of wheel. Pain was only slight at first, but before reaching the house it was agonizing. I suspected rupture of the bladder, as the patient was in a state of shock. Hastily sterilizing a catheter I was confirmed in my surmise, as only a few drops of urine dribbled away.

I gave one-half grain of morphia and arranged to have him brought to St. Luke's Hospital as soon as possible. A delivery wagon was obtained and it made a fairly good ambulance after the box was weighted down with a few sacks of grain. He arrived at Grand Forks in fairly good condition and it was only a short time before all arrangements were ready for operation. The usual incision was made high enough to enter the peritoneal cavity, as the catheter had entered the cavity through the tear in the bladder when I made an effort at catheterizing. On opening the abdominal cavity a rent in the bladder was found about one-half inch in length, and on extending the incision downwards I found the tear had extended for about one and one-half inches in the extraperitoneal part.

The subperitoneal tissues were infiltrated with urine to a small extent, most of the urine, however, being in the peritoneal cavity, which was flooded with it without creating any symptoms of infection or inflammation. The cavity was cleansed from urine and the rent in the intraperitoneal part closed with Czerny-Lambert sutures. The rent in the extraperitoneal part was partly closed and the lower part of the wound trimmed where the edges were ragged, and then loosely stitched to the cellular tissue with fine silk. The abdominal walls were closed, except at the lower edge, and a catheter introduced into the bladder. The wound where not sutured was packed with gauze.

Time of operation about one hour. Patient stood it well and was in better condition when the operation was completed and when put to bed, than before, which I attributed to the removal from the abdominal cavity of the extravasated urine which acted as a poison, and the consequent depression of the vital strength, or shock.

Patient must have passed some urine, although he positively stated that he had not voided any, or else considerable of the urine might have been absorbed by the peritoneum, as the quantity drained was not more than twenty ounces. Not the slightest evidence of peritonitis was noticed and the patient made a rapid and complete recovery.

The abdominal wound was allowed to heal after a few days, when we judged that it was not necessary to keep the bladder absolutely



empty all the time, and the wound healed without any evidence of infection. After the tenth day the use of the catheter was discontinued, except during sleep, and the patient was discharged in five weeks cured, except a very small fistula, which healed in course of two months.

Assistants: Dr. A. O. Low and F. O. Fiset.  
Grand Forks, N. D.

Foreign Bodies in the Appendix.—Dr. James F. Mitchell, of Johns Hopkins Hospital, says in the Bulletin of that institution:

As to the frequency with which foreign bodies other than fæcal masses are found in the vermiform appendix, our opinions have changed greatly in the last ten years; at one time the presence of a foreign body was thought essential to an appendicitis, and the classical orange, date, or cherry seed were often described. Undoubtedly many of them, so eagerly sought, were nothing more than fæcal concretions which are likely to assume these shapes, and unless carefully examined easily deceive the observer. From this extreme the other has now been reached. Many writers at the present day go so far as to state that foreign bodies are never found as the cause of appendicitis, and this attitude would seem to find some justification in the following facts.

Fitz, in 1886, collected 152 cases of perforative appendicitis, and found 12 per cent. of foreign bodies with 47 per cent. of fæcal concretions while Hawkins, in 1895, in 67 fatal cases did not find a single foreign body. In 250 cases of appendicitis in the Johns Hopkins Hospital in the past ten years, there has been only one foreign body—a segment of tapeworm.

With this object in view I have collected 1,400 cases from various sources in the last ten years, and find about 7 per cent. of true foreign bodies; while in 700 of these cases, in which a definite statement was made as to the nature of the foreign body, there were 45 per cent. of fæcal concretions. The older statistics invariably give a higher percentage of foreign bodies.

While so many accounts are evidently untrustworthy because of lack of careful examination, the undoubted occurrence of many queer and interesting objects as shot, pins, worms, gallstones, a tooth, or a piece of bone, has been recorded; and even the discarded grape seed or cherry stone is occasionally seen. Fenger had a case in which two grape seeds and oat husk were found, and Welch once met with a date seed. Osler, in ten years' experience in Montreal, found foreign bodies only twice; in one instance five apple pips, and in another eight snipe shot. Stone, of Omaha, and Ransohoff, of Cincinnati, each removed an appendix containing a bullet as the exciting cause. A case is reported by Holmes, in which 122 robin shot

were present in the appendix of an old man dead of pneumothorax, who, during life, had had no symptoms referable to the appendix; but, who, it is stated, was very fond of game. Interesting in connection with this is the following observation in the *Mémoires de l'Académie Royale de Chirurgie* in 1743. "One notices sometimes in opening the bodies of persons who, during life, have eaten a great deal of game that there is collected in the intestines, and especially in the cæcal appendix, a great quantity of shot, without those persons having had the least inconvenience."

Gall-stones are not infrequent and cases are cited by Gibbons, Nelson and Ulloa y Giralt. Fæcal concretions may so closely resemble gallstones that it is impossible to distinguish between them except by chemical analysis.

Conspicuous among pointed bodies and occurring with apparently greater frequency than any others are pins. Abbe, in his large experience, has met with only two foreign bodies, and one of these a pin. Roswell Park and McBurney had each two cases, and numerous instances are to be found scattered through the literature.

The earliest probable case we have encountered is described by Ruysch, of Amsterdam, in 1691. A young girl had swallowed a pin. Some time afterwards a hard inflammatory tumor appeared in the groin accompanied by fever and acute pain. Soothing applications having been used and suppuration induced, an incision was made in the tumor, and in the pus and fæcal matter evacuated was a rusty pin.

After a careful search we have collected twenty-eight other cases in which a pin was found in the appendix at operation or at autopsy, together with two instances in which a pin had perforated the cæcum.

In no single case has there been any knowledge of swallowing a pin and no explanation is offered for their presence.

Contrary to what might be expected, they occur more often in males than in females (males 17, females 9). Many are in of children under ten years of age; one in a boy of fifteen months; others in adults in various occupations and conditions of life.

One would naturally suppose that such a foreign body in the appendix would lead to rapid perforation; but, while this is generally the case, it is not always so. All types of appendicitis may result. Some give rise to only mild symptoms and may lead to chronic appendicitis (7 cases) with recurrent attacks, or with long-continued pain, or only a feeling of uneasiness in the right iliac region, which may last for months or years, and perhaps finally end in an abscess. Most often, however, there is rapid perforation and abscess formation following the first appearance of symptoms.

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## VACCINATION.

It is doubtless one of the consequences of expansion that smallpox prevails to a greater or less extent in many of the cities of the United States, for the presumption is that it has been brought to this country by soldiers returning from Cuba, the Philippines and our other newly acquired possessions, or else that it has been introduced here through the many letters and packages received from the soldiers still abroad. At any rate the disease is certainly wide spread although so far it has been kept well in hand by the health authorities and there are no extensive epidemics reported. Smallpox is a disease that follows wars and armies, and those whose memory goes back to the civil war in this country say that the disease was more than usually common just after the armies of that war were disbanded.

That the ease with which the spread of smallpox is kept within bounds is due chiefly to vaccination is an unavoidable conclusion. Those who contend that modern hygiene and rigid quarantine are the chief factors in checking the disease do not reason logically from the facts. Were hygienic measures alone effective, measles, scarlet fever and diphtheria should have been as much influenced as smallpox and should have become relatively as infrequent. Were quarantine accountable for the stamping out of smallpox why has it not performed the same service for such a disease as scarlet fever, for instance, which here in Minnesota, at least, has been vigorously quarantined for years in the cities, and

yet is so widespread that only exceptionally does a child reach maturity without having had the disease. This too in the face of the fact that scarlet fever, being communicable chiefly in the later stages, should be much easier to keep under control than smallpox which is contagious almost from the start.

The vaccination of today is quite a different thing from that of the middle of the century. The filthy scab has given way to sterilized bone points tipped with virus collected under rigid aseptic precautions, or to the sealed tube. The dirty lancet has been replaced by the surgically clean needle or other instrument. Not even the cleanest looking skin is trusted nowadays but all must be scrubbed with soap and hot water before the surface is broken. In fact it is recognized that vaccination is a surgical operation and must be performed under the same precautions for ensuring asepsis that accompany other operations, with the exception that the use of chemical antiseptics is prohibited by the danger of destroying the germs of the virus. Woe to him who through carelessness or indifference neglects to take proper precautions in his work, whether he is vaccinating the rich man in his residence at the full fee or doing up factory operatives by the hundred at contract prices which net him but a few cents apiece for the vaccinations beyond the cost of the virus. People are no longer to be fooled into believing that a "bad arm" is due to "taking cold," and a disabled limb following vaccination if carried into court would make it very unpleasant for the vaccinator unless his method of operating stood the test of a most rigid scrutiny from the standpoint of asepsis.

There are certain points about vaccination that are not yet settled and cannot be until much long continued and accurate observation has been brought to bear upon them. For one thing, is it the rule or is it the exception for vaccination to take twice in the same individual? Undoubtedly the majority of medical men will say that they have successfully vaccinated many people more than once, but there are many competent observers who believe that a second vaccination is about as unusual as a second attack of smallpox. It is common enough to vaccinate successfully those who have enormous scars from previous inoculations, but were those scars vaccina-

tions? They were certainly poisoned wounds, for the scar of pure vaccination is small, faint and delicate, with characteristic pits marking the multicellular character of the vesicle. This scar is easily masked by the poisonous ulcer resulting from the use of impure virus or contamination of the vaccination wound in other ways. The only reliable evidence of a second vaccination is when the same operator has successfully vaccinated the same person twice, and has proved his success by personally inspecting the vaccination on the eighth day after inoculation, the day when the vesicle shows most typically. Unfortunately this is rarely done, the usual thing being to leave it to the patient to decide by the subsequent "sore arm" that the vaccination has "taken."

The solution of the question of the possibility of a second vaccination at all must precede the decision of the frequency with which it is necessary to vaccinate. Meantime some limit must be taken empirically and perhaps the generally adopted five year term cannot be improved upon at present.

## MISCELLANY.

### POINTS IN THE ARSENICAL CAUSTIC TREATMENT OF CUTANEOUS CANCERS.

Dr. Gottheil draws the following conclusions:

1. The arsenious acid caustic treatment of skin cancers does not contemplate or depend upon the actual destruction of the new growth by the caustic.

2. The method is based upon the fact that newly formed tissue of all kinds has less resisting power than the normal structure when exposed to an irritation and its consequent inflammation. Hence the former breaks down under an "insult," which the latter successfully resists.

3. If therefore the whole affected area can be subjected to the influence of an irritant of just sufficient strength to cause a reactive inflammation intense enough to destroy the vitality of the new cells, the older normal cells will survive.

4. Arsenious acid of properly mitigated strength is such an agent, and its application causes an inflammation of the required intensity.

5. It therefore exercises a selective influence upon the tissues to which it is applied, and causes the death of the cancer cells in localities outside the apparent limits of the new growth, where there is as yet no evidence of disease.

6. It is superior, in suitable cases, to any method, knife or cautery, which requires the exercise of the surgeon's judgment as to the ex-

tent to which it is to be carried. That that judgment is often wrong, and necessarily so, is shown by the frequency of recurrence under these methods even in the best hands.

7. It is applicable to all cutaneous carcinoma in which the deeper structures are not involved, and which do not extend far on to the mucous membranes.

8. It is easy of application; it is safe; it is only moderately painful; and its results compare favorably with those obtained with other methods.

### THE TREATMENT OF HARELIP AND CLEFT PALATE.

This much discussed topic continues to be the subject of a good deal of doubt in many minds as to when and how to operate for the various conditions that present themselves. Many of the procedures necessary are entirely within the range of the general practitioner, but there always remains a feeling of hesitation as to the methods most advisable to employ, and the most suitable time for operation. Towards solving such doubts an authoritative review of the recent literature of the subject, and conclusive statements as to what seems best in the therapeutic suggestions that have been recently offered by various writers will be of the greatest value to the busy practitioner.

Such a review of the treatment of harelip and cleft palate is given by Dr. J. Chalmers DaCosta, in "Progressive Medicine."\* From it we gather that the tendency is more and more towards early operation. The third or fourth month used to be considered the earliest suitable time to operate. Murray now counsels operation in the fourth week; Mumford and Heath think it should be undertaken not later than from the sixth to the eighth week. Where cleft palate exists it is not operated upon so early. The harelip is operated upon alone, and the persistent pressure made by the closed lip helps to lessen the gap in the growing bone. The operation on the cleft palate is put off for awhile, but this, too, not nearly so long as it used to be. If the closure of the defect is delayed until the child has learned to talk, the peculiarities of speech, especially its offensive nasal character, will never be corrected. The authorities are agreed, then, that a cleft in the soft palate should be closed about the sixth month, and in the hard palate during the second year.

The practical suggestions collected from the recent literature of the subject by Dr. DaCosta are very valuable to the ordinary practitioner. Space will permit us to give but a few of them. The use of the knife in operation rather than the scissors, because the latter crushes tissue more,

\*"Progressive Medicine," a Quarterly Digest of New Methods, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M. D. Vol. 1, No. 1, March, 1899. Lea Brothers & Co., Philadelphia.

leaving its vitality impaired, especially at the edges where this is so important for subsequent union; the avoidance of pins or heavy sutures in securing proper apposition after the operation is advised, though these are faults of technique in this matter that we fear have been so ground into the present generation by text-book and teacher that failures of union due to these crude early methods will still continue to be frequent. The suggestion by Mumford as to anchoring the nares with shotted wire will remove a very common cause of failure due to the child's inevitable tendency to "turn up its nose" at and after the proceedings.

In double harelip it is advised to remove the intermaxillary bone by subperiosteal operation a week before the operation on the lip. If left it is liable to undergo necrosis. Its removal leads to some flattening, but this will not be great if the bone be removed by subperiosteal operation, and if but one side of the harelip be operated upon at a time. Among the directions for the operation for cleft of the hard palate, we note these pre-operative measures of precaution from Owen, which are sometimes forgotten, but of which the practical value it is easy to see; never operate unless the child is in the best possible health; remove carious teeth, adenoids and enlarged tonsils before operating, and operate whenever possible in fine weather, so that the patient can get out of doors soon afterwards. The neglect to remove such ready sources of infection as carious teeth and those harborers of microbes, the irresistible tissues of adenoids and enlarged tonsils, is very probably the source of a good many of the failures in uranoplastic osteo-resection.

#### MONSTROSITIES WANTED.

The Pathological department of Rush Medical College solicits contributions of teratological specimens for the museum. The teratological series of the museum is now the best in the northwest, and it is desired to still further improve it.

Specimens of monstrosities and gross malformations, both human and animal, will be carefully dissected and marked with the donor's name, a copy of the photograph and of the dissection notes will be sent him and due credit will be given him in any publications which utilize the specimen. It is desired that the fresh specimens be sent, if possible, or that they be preserved in a five per cent. solution of formalin, or in a fifty per cent. solution of alcohol. Transportation charges will be paid by the college. The recording of any clinical facts in connection with the birth of a monster will add to the value of the contribution.

Communications may be addressed to Dr. L. Hektoen, Rush Medical College, Chicago, or Dr. H. F. Lewis, 4426 Lake Ave., Chicago.

#### THE APRIL MAGAZINES.

The Atlantic contains two exceptionally brilliant papers. One is by Prof. John Fiske, on the "Mystery of Evil," and, like all that Prof. Fiske writes, the article is profound and thoughtful. His conclusion cannot fail to interest all thinking and reflecting people.

The other article is by a brilliant young writer and scientist, who has come pretty near upsetting theories long held by the scientific world. The article is entitled "The Solar System in the Light of Recent Discoveries," and it is by Prof. J. J. See. Prof. See's position is that the original condition of what is now the stars and planets was not one of extreme heat, but of extreme cold. This is contrary to the theory of the great Laplace, and if it shall be accepted by the scientific, it will place Prof. See near the head of the great men of this century. Close upon these two fine articles, in interest and value, is an article by Samuel Harlen Church, on Cromwell.

Harper's has also a fine article on "Cromwell and His Court," which contains many incidents and anecdotes that gives an interesting view of a great man, and one not commonly familiar to the general reader. "Honor to Whom Honor is Due," part III. of "The Spanish-American War," and "The Trial of the Oregon" are the war features of this issue. "The Equipment of the Modern City House" is an excellent article by the best architectural writer in the country, Mr. Russell Sturgis. The excellent short and continued stories of the number, and the Departments, such as "The Drawer," give this issue the peculiar flavor that belongs exclusively to "Harper's New Monthly Magazine," and that makes it always "new."

The Review of Reviews tells of the work of the last Congress; tells how Kipling's sickness touched the whole world, giving incidents from far-away lands and from all sources; tells just what we all want to know about the Nicaragua canal; tells things about the Philippines that few know; tells about the Czar's peace conference; tells about the French election; tells about the Joint High Commission between Canada and America; and, in short, tells about the world as the busy man, and the student, too, likes to view it at the end of the month.

The Ladies' Home Journal may seem to have a special fondness for prominent names among its contributors, nevertheless it has the discrimination to select the names of people who know how to write matter that will be read, and that ought to be read, in American homes. In the May issue Ian Maclaren will begin a series of articles on the Pastor's Work, and he will set some pastors, perhaps many thousands, to thinking whether they come up to the full measure

of their opportunity. Anthony Hope will also begin a series of articles in that issue, but his will be a romance, "The Countess Emilia."

The April number is full of beautiful and useful things, and as we turn the pages, and glance at the illustrations, the subjects treated, and the names of writers, we readily understand why "The Journal" will soon have a million subscribers, as it now, no doubt, has even more than a million readers.

Lippincott has a romance of the eighteenth century, entitled "The House of Pan," by Anna Robeson Brown, for its complete novel. "The Men Who Impeached Andrew Johnson," "Over, Under, and Through Boston," and "How an Earthquake Looks and Feels," are the principal articles in the April issue of this excellent magazine.

## NOTES.

### SPECIAL COURSES IN SURGERY GYNÆCOLOGY, SKIN AND VENEREAL DISEASES.

The Chicago Polyclinic announces a special spring course of three weeks for physicians, covering the above subjects.

As our readers know, the polyclinic has in its faculty some of the best men in the profession, and that these special short courses have become very attractive to the busy practitioner who cannot afford only a few weeks now and then to brush up. The truth is that to a busy man such courses alone take the place of the continuous study which the demands of his profession often deny him.

We are pleased to notice in the list of lecturers the name of Dr. Frank Allport, formerly of Minneapolis. His subject, "The Enucleation and Evisceration of the Eyeball," recall to mind some of the admirable articles he contributed to our columns while in practice in the Northwest. Fuller information of the course may be had by addressing "The Chicago Polyclinic," Chicago.

### INTRA-NASAL DISEASES.

Speaking of Unguentine, we have found it an excellent application to the nose after the removal of spurs of the septum or anterior hypertrophies by either the saw or cautery. Frequently the crusty scab which forms is the source of considerable annoyance to the patient and actually delays the healing process.

The frequent washing with alkaline solutions renders the tissues boggy and even then is not always effectual. A small pledget of cotton with the ointment applied to one side and placed in situ will promote a more rapid healing of the nasal tissues than any other method with which we are familiar. After a few hours a bit of the ointment may be applied frequently and the abraded surface kept comfortable as well as clean during the healing process.—Atlantic Medical Weekly.

### CONVALESCENCE FROM FEVERS, LA GRIPPE, ETC.

In convalescence from all forms of acute exhausting ailments, it is confidently claimed that "Gray's Glycerine Tonic Comp." formula, Dr. John P. Gray, is an unequaled restorative. It is compounded with especial care of the choicest materials, and is a preparation of an unalterable character, wherein the harmonious action of each ingredient is guaranteed.

Constituents:—Glycerine, Sherry Wine, Gentian, Taraxacum, Phosphate Acid and Carninatives.

It does remarkable service in promoting healthy stomachic conditions, checks fermentation, stimulates the nutritive functions, and thus restores tone to the entire system. It also promotes glandular secretion, a matter of much importance, and soon puts the patient in a condition to resist complications.

Its taste is grateful and inviting, and to debilitated subjects it is refreshing and satisfying without producing any over stimulation.

The tendency to contract colds during convalescence is averted owing to its favorable action on the respiratory system.

It furthermore does not constipate and causes no unpleasant reaction whatever.

Doses.—Adults: 2 teaspoonsful to a tablespoonful in a little water before meals, t. i. d. (or after meals when preferred.)

Children:  $\frac{1}{2}$  to 1 teaspoonful.

To quench thirst: a teaspoonful in a half-glass of water. There is nothing better. It is manufacturer by The Perdue Frederick Co., 15 Murray Street, New York.

### ONE OF THE OLDEST ANTISEPTICS, BUT ONE OF THE BEST.

There are thousands of physicians, yes, tens of thousands, we doubt not, who can say with "Doctor," in "An Interview," "Why, I absolutely depend upon Listerine in most of my throat work, and find it of inestimable value in my typhoid cases (as many a poor soldier boy can testify), and there are a number of purposes I put it to in the sick room, where nothing can take its place, notably, as a douche, mouth-wash, and in sponging my fever patients. Furthermore, I always deem it my duty to see that my patients get exactly what I order for them, therefore, I always order an original package, thus avoiding all substitutes. That is just where my views upon professional attitude and sound business policy consolidate into one joint effort for the patient's benefit, and incidentally, my own."

Like every other good thing, Listerine has been counterfeited, as many a physician has found to his regret, none of the "just as good and cheaper" preparations approaching it for trustworthy antiseptic service.—Mass. Medical Journal.

### VAGUE AND INDEFINITE PAINS DUE TO LATENT RHEUMATIC CONDITIONS.

The physician is frequently called upon to treat patients, who though not ill enough to be in bed are not at all well. Their appetite is capricious, they sleep indifferently or even if they sleep soundly, they are not refreshed and in the morning they are more fatigued and ill at ease than was the case on retiring. Upon awaking there is frequently an aching sensation in the loins, sometimes in the lower limbs, which is noticed upon getting out of bed or in dressing, and particularly in putting on their hose or lacing their shoes. As the day progresses this soreness may partially wear off, but there is at all times a vague, undefined, uneasy painful feeling.

A competent examination of the urine in these cases will in almost every instance be found to disclose a notable absence of the soluble urates. On the contrary it may be loaded with the phosphates and very frequently bile will be present, as also uric acid. If the condition remains neglected, the probable results will be sooner or later a pronounced attack of rheumatism in one or another of its forms. All that is needed to induce such a condition is a sudden change in the weather or the exposure on the part of the patient to cold or wet or a combination of the two. This is due to a latent rheumatic diathesis, to which every adult is liable.

In such cases the physician will find Tongaline in any one of its forms as indicated, given at short intervals with copious draughts of hot water, a remedy which goes directly to the source of the trouble. Tongaline seeks out the retained excretions or perverted secretions, which it either neutralizes or renders amenable to the physiological action of the emunctories, and then it brings to bear its strong eliminative powers, correcting the complaint promptly and thoroughly.

#### UPBRAIDING THE DOCTOR.

Dr. Samuel Wolf, physician to the Philadelphia hospital, and neurologist to the Samaritan Hospital of Philadelphia, presents, among others, a case which is of special value at this time. He says: "The entire experience of the writer with antikamnia is not confined to the series of cases on which this paper is based. although its previous use had been limited to a few prescriptions, and those in cases where it was given after the usual routine had been exhausted. It is however, to a striking result in one of these instances, that the incentive to investigate more fully, is to be largely attributed. A man of 42, in the course of an attack of la grippe, was enduring extreme torture from the pain of a trigeminal neuralgia. The second ten grain dose of antikamnia gave such complete and permanent relief, that my patient, a druggist of large experience, upbraidingly asked me, "Why didn't you prescribe this remedy before?"

### RELIEF AND CURE IN CATARRH.

"A slender-built, 11-year-old boy, prone to attacks of catarrh of the throat and nose, had suffered for about ten days from a thick and abundant muco-purulent discharge from the nose. The nasal passages were coated with thick crusts. Breathing through the nose was impossible, the voice was muffled, and there were frequent attacks of epistaxis. The use of Glyco-Thymoline, diluted, twice daily, had an excellent effect. Secretion diminished, crusts ceased to form, bleeding soon ceased, respiration became more free, and in a few days the trouble had disappeared."—*Universal Medical Journal* for November, 1896.

### SANMETTO IN ENURESIS DIURNA ET NOCTURNA.

Some years ago my attention was called to Sanmetto as a remedy for troubles of the genito-urinary organs, particularly in men past middle life, and I have had some very gratifying successes with its use. Recently I was called upon to prescribe for two boys, eight and ten years of age respectively. Everything had been tried, including whipping, to break up the "habit" of wetting the bed at night, and one of them also his clothing in the day time. It occurred to me that Sanmetto would be worth trying, and to the delight of every one concerned it has been perfectly successful; and now for the past six months and twelve months respectively, these boys have been entirely cured of this unfortunate "habit." Undoubtedly the trouble was due to irritability of the prostrate and mucous membrane of the bladder; hence the prompt and permanent relief afforded by Sanmetto. I have written these few lines hastily, calling the attention of the profession to these cases, with the hope that others will try the same remedy for the same "habit."

James A. Stewart, M. D.

Baltimore, Md.

### UTERINE WAFERS.

Micajah's Medicated Uterine Wafers have become a factor in the treatment of vaginitis, leucorrhoea, cystitis, etc. Their use is recommended by recognized authority, and the results derived are highly satisfactory. Owing to the antiseptic and astringent action of these wafers, they are of service in the treatment of catarrh and all affections of the mucous membranes.

#### A CARD.

Dr. H. L. Campbell, Watauga, Tenn., writes: I received the sample of "Blennostasine" you so kindly sent me. I was suffering from an extremely severe "coryza," and took a pill once every hour until three had been taken. The cold disappeared as if by magic. I have prescribed it in two or three other cases of acute colds, with invariable relief.

## LECTURES AND ADDRESSES.

## THE WORK OF CHARCOT.\*

By C. EUGENE RIGGS, A. M., M. D.,

St. Paul.

It would be impossible in the short time at my disposal, (said M. Raymond) to trace, with any detail, the work which Charcot accomplished in his life. I shall restrict myself, therefore, to pointing out the creative rôle played by him in the building up of an order of knowledge which touches the highest summits human wisdom may attain.

Today it is a commonplace that the principle of the division of labor dominates creation. In the animal world we see a series of species which are developing toward perfection, and the higher we go in the scale the more complex become the organs for distinct functions. This is above all true in the anatomical and functional organization of the system which rules all the others—namely the nervous system.

Half a century ago the spinal cord was considered a simple conductor, a nerve bigger than the others, uniting the brain to the different organs of the body. The brain itself was regarded, from a functional point of view, as a homogenous mass. Today, we know that the brain is an assemblage of centers, each one of which fulfills a distinct and definite function. One territory controls the execution of voluntary movements, and each one of its subdivided tracts presides over a certain group of muscles; there is a distinct zone charged with the perception of luminous impressions, another with the perception of sounds, and so on.

This is what we teach as the doctrine of cerebral localization. Its full development is the work of the last twenty years. Already it has revolutionized and dominated psychology. In the work of its building up Charcot took a preponderant part. In the hands of Dax, Broca and Brouillard, the clinic, that is to say the simple observation of the sick person, demonstrated that there exists in the left hemisphere a special center of articulate language. Later, after the experiments of Fritsch and Hitzig upon the monkey had shown us that a certain extent of brain surface may be excited by electric currents and that the electrization of this excitable zone provoked muscular contractions following a fixed order, Charcot took up the method which had led to the discoveries of Dax and Broca and

developed it. He did more. He formed into a system the application of this anatomico-clinical method, so-called because it consists essentially in the search to discover if, to troubles denoting the suppression of a certain function, there does not correspond the destruction of a certain territory of the brain or of other portions of the nervous centers.

Let me say that the recognition of this doctrine has been far more than a platonic triumph of truth over error. It has had consequences too numerous to recite here. I will only call your attention to one of them which relates to the therapeutic applications of the new doctrine.

Against organic maladies having their seat in the brain the resources of medicine, "remedies," in fact, avail little or nothing. But we may call in the surgeon with some hope of success to remedy disorders caused by lesions situated at or near the surface of the brain. Thanks to our new knowledge of brain localization it is now possible to determine with certainty in most cases, the true seat of intracranial lesions. Consequently when it is necessary to open the skull and lay bare the brain to remove a superficial lesion, the destruction of tissue involved by such work has been reduced to a strict minimum. Thus, such operations have entered into the domain of current practice to the great advantage of the afflicted.

Again, Charcot has contributed largely to the revolution in our manner of regarding the cord, its functions and pathology. I will try to make clear the bearing of this revolution.

Instead of a simple nerve larger than the others, the cord has been revealed to us as an interlacement of centers and conductors which have functions of their own. The centers are places of relay between centers situated in the brain and the motor and sensory peripheral apparatus; the conductors are charged with uniting this apparatus with these controlling centers, some of which are in the brain, and some in the cord. This knowledge is in part the result of applying the anatomico-clinical method, that is to say, we have been initiated by it into a knowledge of the relations between certain nervous troubles and the lesions of diverse bundles and centers that compose the cord. For the vague pathology based on symptoms has been substituted the rational pathology built up upon our acquaintance with the connection between the nature of the morbid troubles and the seat of the spinal lesion. For instance, an atrophy of the muscles under certain conditions now appears to us as the result of a disease in the ter-

\*Translated and Abbreviated from the Address of Professor Raymond at the Unveiling of the Monument by Falguiere in front of the Hospital of the Salpêtrière, December 4, 1898. (Nouvelle Iconographie de la Salpêtrière.)

ritory of the cord which presides over muscular nutrition, and is no longer regarded in itself. In the same way, all the other pronounced nervous symptoms, such as motor and sensory paralyses, spasms, pains, etc., are considered in their relations to the lesions of such or such an anatomical or functional system.

Other results have followed which could not have been foreseen in the beginning, so apparently in contradiction are they to what was expected; and their bearing is incalculable.

In the search to determine if, to a fixed category of nervous symptoms always corresponded a fixed lesion of brain or cord, a strange discovery was made. It was found that the different kinds of nervous phenomena which show themselves either individually or as accompaniments of the nervous malady, may exist independently of any lesion whatsoever of brain, cord or nerve. I repeat, that the importance of this discovery is incalculable. We knew already that there existed certain affections of the nervous system called neuroses, which were independent of lesions, but we did not know that all symptoms and all diseases whose seat is localized in the nervous system might present themselves under the form of neuroses. It is again to Charcot and his school that we owe this conception. It is to him, above every one else, that we owe our knowledge that the great neurosis, hysteria, may appear in the dress of the most diverse maladies. And Charcot, more than anyone else, has contributed to our knowledge of the stigmata of hysteria, that is to say of the hidden signs, more or less constant, whose verification permits us to determine the existence of hysteria under the most unlikely aspects.

But what is the result of all this? In the first place we now understand the great frequency of hysteria, and the fact that men as well as women, are its victims. In the second place, our knowledge of the hysterical stigmata has furnished a means of diagnosis between the diseases resulting from incurable lesions of nerve centers and their hysterical counterfeits. Thus we have been able to cure the paralyses, trembling, convulsions, disorders of speech, perversions of character and intelligence and other manifestations long thought incurable. In many cases these cures have seemed miracles.

Finally, a more exact knowledge of the way hysteria develops has enabled us to attack it at the root. It is often the result of heredity. In those who are born with a predisposition to it it will manifest itself habitually, following certain provocations, such as fear, violent emotion, accident, poisoning, and above all, the use of alcohol. To root it out we must combat the predisposition in children and young persons, submitting them to a physical, moral and intellectual hygiene calculated to build up and maintain the

proper functioning of the nervous system in normal ways. In fact, the causal treatment of hysteria has become a question of individual and social hygiene of great import.

Both the causal and symptomatic treatment of hysteria are based upon what we know of the mechanism of hysterical manifestations, and it is still to Charcot that we are indebted for the greater part of our knowledge. I will try to explain this mechanism somewhat.

In the waking condition our cerebral activity is exercised in two distinct ways. Sometimes we have full consciousness of what passes around us and in us, and our will rules our acts within the limits of its power over the organs of motion.

Sometimes we have only a vague conception of external impressions and of what passes within us, and our acts are controlled more by acquired habits than by will. Our animal machine is accustomed to react to certain impressions by certain movements. At a given moment this reaction, however complicated it may be, is produced automatically. We have no clear consciousness of the provoking impression, and our will only intervenes to give the first impulse to muscles accustomed to contract in a certain way. This second way of functioning of the nerve centers is the mark of cerebral automatism. During natural or artificial sleep it is the only way in which the nerve centers function.

But what happens in hysteria? Who has not heard that commonplace saying, "the hysterical patient is very suggestible." What does this phrase mean?

The hysterical patient is suggestible; that is to say, he allows impressions to be foisted upon him which he imagines he feels but which he does not really feel, and acts which seem to be voluntary, but which are really executed at the instigation of an alien will. His psychic activity is dominated by cerebral automatism. When the neurosis is fully developed, cerebral automatism may be established by some forcible external impulse or by a look, an inarticulate sound, a sensation or a memory.

Thus, one may often see a violent blow upon a limb cause paralysis. The patient cannot, of himself, conceive that this paralysis is pure imagination, the product of a perversion of consciousness and will. Under the impulsion of his own will he is really unable to move the member which he imagines paralyzed. But let a physician or some one whom he believes skilled in healing, suggest to him that he is no longer paralyzed, that he can move his arm, and very frequently, especially if the case is not of long standing, the paralysis will disappear instantly.

However, in the waking condition, this alien will which intervenes for the purpose of healing may be thwarted by what remains of the will, and



the consciousness belonging to the brain of the patient. In such a case this remainder of will may be suppressed by putting the subject to sleep before making the curative suggestion. Suggestion thus exercised during induced sleep, is hypnotic.

Now, putting sick people to sleep after this fashion has been practiced for a long time as has fascination or mesmerism by the power of the eye, and analagous usages. But these things took place in a domain which the encroachments of charlatanry had rendered inaccessible to science. In the eyes of the official representatives of science a certain discredit attached to any interest whatsoever, in mesmerism, magnetism and the like.

Thus Charcot gave proof of a kind of civic courage when he dared to include hypnotism in the circle of his researches. He was led to do so by the close affinities which the hypnotic state showed with hysteria. It had been recognized by some experimenters that only hysterics could be hypnotized and that some of the phenomena observed in hypnotic subjects occurred spontaneously in certain hysterical states. This led Charcot to believe that hypnotism was an experimental neurosis.

In taking up the study of hypnotism his aim was to untangle the objective reality of that in which assumed the garment of the supernatural. He desired to furnish a reasonable explanation of the phenomena. His discoveries in this perilous path of research exceeded all that one dared to hope for them. By revealing the fact that simple physical agents, such as light, sound, or the application of a metal, could produce hypnotism, Charcot despoiled the mesmerizer and magnetizer of their assumption of occult power. He initiated us into the fundamental characteristics of the three states,—lethargy, catalepsy, induced somnambulism—which include the whole symptomatology of hypnotism. Finally, he proved to us that, if the intervention of the hypnotizer had nothing mysterious about it, since the latter could do neither more nor less than certain physical agents, still less were the phenomena of hypnotism connected with the occult. They are essentially the product of cerebral automatism, like the other manifestations of hysteria. During its activity the brain stores up in the shape of memories all that passes in and around us, especially the representations of the movements that we execute with apparent spontaneity or that we have the habit of executing under the influence of certain impulsions. The greater part of hypnotic phenomena are merely the awakening and putting in action of these recollections in a personality whose will has been made subservient to an alien will which dominates and directs its automatic cerebration.

Thus we find the same pathogeny serving to explain the phenomena of hypnotism and of hysteria. Both are psychic disorders which reveal a disease of personality, an obscuration of the ego.

I trust I have made clear, in some degree, the work which has been done by Charcot in building up the great doctrine of cerebral localization; in sketching out the new pathological physiology of the cord, in forming the anatomico-clinical method; in disengaging from chaos the innumerable manifestations of hysteria, discovering the laws which rule it and making plain the inner mechanism of its manifestation; in demonstrating the relations of hysteria and hypnotism and making it plain that the latter is an experimental neurosis.

I hope, too, I have shown that Charcot was a therapeutician in the most elevated sense of the word. We may say that so far as the maladies of the nervous system are concerned, he has prepared the path for the therapeutics of the future, and if these ever see the light of day, they will take into consideration both individuals and society, and will be summed up in the practice of all our duties toward ourselves and the species.

But I perceive that in speaking of the work I have neglected the man. His life may be summed up in two words; it was divided between the delights of home life and his professional obligations. Charcot counted above everything that can flatter and stimulate a man, the happiness which he tasted when surrounded by a family whose pride and idol he was, and the happiness of seeing his only son associated in his work and showing himself worthy to follow in his footsteps. But he never passed a day without devoting a large part of his time to his researches, his teaching and his patients. His persistence in labor equalled his mental brilliancy and resulted in a marvellous erudition. At every period of his life he evidenced a wonderful perseverance; this was revealed in the fidelity with which he cherished this hospital of the Salpêtrière where his medical career has unfolded, in the tenacity and energy with which he defended the doctrines whose triumph he assured and in the indefatigable ardor with which he created and developed the method of teaching the diseases of the nervous system.

The success of this teaching was unequalled. It was maintained in its brilliancy to the end of his life. He grouped about him auditors from all quarters of the world. He encouraged all the talents which were revealed to him; he associated in his researches all those who had the honor to be counted among his disciples. He armed them with his method; he promoted their advancement in their careers, seconding them unflinchingly with

all the weight of his authority. Thus he created this school of the Salpêtrière whose renown was and is so considerable. It is inextricably associated with his work; sustained and inspired by him, it will follow with docility in the path which he has opened and will preserve his memory forever, for the name of him whom we honor today is imperishable. Among the physicians of our century he is the greatest of all.

**ORIGINAL ARTICLES.**

**SOME OF THE ASPECTS OF RENAL INADEQUACY.\***

BY H. A. TOMLINSON, M. D.,

Superintendent of St. Peter State Hospital,

St. Peter, Minn.

Renal inadequacy, a term first used by Sir Andrew Clark, may be described as an inability of the kidneys to eliminate completely the waste products of the body either because they are themselves the seat of disease, or because the products of destructive metabolism come to the kidney in such form chemically as to be unable to pass through the renal epithelium or to complete their elaboration into those compounds which can be secreted and excreted by the functional portion of the tubules.

Important points in regard to the physiology of the kidney, which today is regarded as a secretory as well as an excretory organ, are its very large blood supply, its intimate association through its nerve supply, not only with the other abdominal organs but also with the vital processes of circulation and respiration, and its division into pyramids, each of which with the cortex above it is practically a separate kidney.

The constituents of the urine whose elimination is most essential to the welfare of the organism are urea and the various compounds with uric, phosphoric, sulphuric and hydrochloric acids. The relative amounts of these substances eliminated during the twenty-four hours and their proportion to each other indicate not only the degree of functional activity of the kidneys, but also the nature and completeness of the changes going on in the organism as a whole.

It is well known that the functional activity of the kidney is under the control of the nervous system to a remarkable degree, and that with healthy kidneys the secretion of urine may be greatly increased or diminished by causes operating entirely through the nerve centers. When such a cause operates upon a subject whose kidneys are structurally diseased the consequences may be very serious.

There are reasons for thinking that in some cases renal inadequacy is congenital; this would account for the fact that among people in the same environment only a few suffer from renal inadequacy either in the simple functional form or in the graver one due to degenerative changes of the kidney. Thus in an epidemic of an exanthematous disease there are but few cases of nephritis and these do not necessarily coincide with the severer cases of the exanthema.

An analysis of the urine was made in the case of the 1106 patients admitted to the hospital in the four years between August 1, 1894, and August 1, 1898, with the following results:

	Men.	Women.	Total
Specific gravity increased	338	210	548
Specific gravity decreased	76	104	180
Urea increased . . . . .	26	12	38
Urea decreased . . . . .	337	260	597
Indican increased . . . . .	203	162	365
Albumen present . . . . .	268	204	472
Sugar present . . . . .	138	62	200

When it is taken into consideration that in the large majority of these cases there was nothing in the history or symptoms at the time of admission to the hospital to indicate that there was any renal disease present; that about sixty per cent. of them either recovered entirely mentally or sufficiently to enable them to get along outside of the hospital; that the death rate among them was approximately three per cent; that out of the whole number considered, 1,106, the specific gravity of the urine was decreased in 180, urea was diminished in quantity in 597, albumen was present in 204 and sugar in 200 cases, it will be seen that apparently considerable interference with the function of the kidney may be present without serious degenerative change in the organ and that these diseased conditions may entirely disappear, leaving behind them no evidence of chronic renal change. At the same time it is a fact in our experience that when a patient comes to the hospital in whose case urinalysis shows marked evidence of renal inadequacy, the disappearance of the acute mental symptoms almost invariably goes on *pari passu* with the restoration of the constituents of the urine to their normal relation, both as to quantity and quality.

The following table shows the result of a careful examination of the 24 hours urine in 83 selected cases, in one series with marked clinical evidence of nephritis, in the other series with no such evidence. In all of these cases the diet and general environment of the patients was practically uniform at the time when the observations and examination of the urine was made.

\*Abridgment of a paper read before the Minnesota Academy of Medicine, March 1, 1899.

## EXAMINATION OF URINE.

	Clinical Evidence of Nephritis. 38 Cases.	No Clinical Evidence of Nephritis. 45 Cases.
Quantity increased . . . . .	2	3
Quantity decreased . . . . .	29	28
Quantity normal . . . . .	7	14
Sp. gr. increased . . . . .	19	16
Sp. gr. decreased . . . . .	9	9
Sp. gr. normal . . . . .	10	20
Urea increased . . . . .	4	8
Urea decreased . . . . .	7	11
Urea normal . . . . .	27	25
Phosphoric acid increased . . . . .	7	7
Phosphoric acid decreased . . . . .	4	9
Phosphoric acid normal . . . . .	26	29
Sulphates increased . . . . .	24	25
Sulphates decreased . . . . .	13	20
Sulphates normal . . . . .	1	0
Chlorides increased . . . . .	14	12
Chlorides decreased . . . . .	4	12
Chlorides normal . . . . .	20	21
Albumen . . . . .	3	0
Sugar . . . . .	7	0

At first sight this table shows no constant relative disproportion between the various salts of the urine which might aid in the diagnosis of renal insufficiency. But it must be remembered that patients were put into one or the other category according as they presented or did not present significant symptoms of nephritis. It is well known, as has recently been stated by Cabot, of Boston, that an autopsy may reveal a nephritis unsuspected during life, while on the other hand with albumen and casts present during life the autopsy may show no nephritis. In all of the patients suffering from renal inadequacy, in whom there had been a definite well marked attack of uræmia, there was in the beginning of the attack, decrease in the quantity of urine, decrease in the percentage of urea and chlorides with increase in the percentage of phosphates and sulphates. Moreover, several of the cases placed in the category of those furnishing no clinical evidence of nephritis showed this same disturbance of the relative proportion of the solid constituents of the urine, and one of these has since died. At the necropsy marked evidence of advanced degenerative change was found in the kidneys, although there were no clinical evidences of nephritis before death.

The following cases illustrate the varying aspects of renal inadequacy in its graver forms. M. W., woman, aged 58 years, a widow. She was the victim of circular insanity, had spent the

greater part of the past twenty years in the hospital and was admitted the last time, September 4th, 1896. She was said to have just recovered from typhoid fever. The action of the heart was irregular and intermittent, ankles œdematous, appetite and digestion impaired, she was constipated and could not sleep. At this time the urine was decreased in quantity, contained 1 per cent. of albumin, urea 1 per cent., chlorides, 8 per cent. Microscopically there was renal epithelium. She improved rapidly, however, and was in fair health until in June, 1898, when she became weak, stupid, took nourishment poorly and complained of precordial distress. The skin was cold and clammy, lips and finger ends cyanosed. The 24 hours urine at this time amounted to 900 c. c., sp. gr. 1031, albumin, a trace, urea, 3 per cent., phosphoric acid, 2 per cent., sulphates, 20 per cent., chlorides, 5 per cent. Microscopically there were granular epithelium and leucocytes. The patient grew weaker, the area of cardiac dullness increased, there was a murmur at the apex, systolic in time and transmitted to the axilla, also a systolic murmur at the base, and she complained of pain over the sternum. The abdomen was distended and tympanitic, but not tender, tongue heavily coated, lips blue, and there were petechiæ scattered over the body and limbs. The temperature was 101° in the evening, the pulse rapid and feeble and she was very stupid. Her physical condition did not change materially during the next month, except that the stupor increased and there was occasional twitching of the facial and flexor muscles of the limbs. The urine became still further reduced in amount, but there was no material change in the proportional amount of the constituent elements. Granular and hyaline casts, however, began to appear. On Aug. 4th, the week she died, the sp. gr. of the urine was 1,023, there was no albumen, urea 3 per cent., phosphoric acid 2 per cent., sulphates 1.5 per cent., chlorides, 9 per cent. During the last week of her life she had frequent attacks of dyspnœa and there was marked decrease in the amount of urine with retention. She took nourishment well, however, until an hour before she died. At 9 a. m., Aug. 9th, she became rigid and passed rapidly into a tonic convulsion. The pupils were dilated but unequal, the urine was passed involuntarily, there was expulsion of frothy saliva from the mouth and she was cyanosed. In about twelve minutes the muscles relaxed, she gasped once or twice and was dead.

The condition of the brain, post mortem, was what we have come to consider characteristic in death from uræmia. There was increase of cerebro-spinal fluid, distension of the pial vessels with dark fluid blood, the sinuses in the same condition. The membranes and brain were œdematous and soggy, the ependyma in the ventricles

oedematous, especially in the floor of the fourth ventricle; while the blood vessels were deeply injected and showed well marked puncta on section of the medulla. The heart weighed 396 grams, the right ventricle was filled with fluid blood, it was dilated and its walls thin, the left side of the heart was hypertrophied, the aortic valve was incompetent, the other valves healthy. There was marked atheroma of the aorta and it was dilated. There was fluid in both chest and abdominal cavities and the viscera showed evidence of degenerative change. The right kidney weighed 113 grams, the capsule was slightly adherent, the kidney was lobulated, its surface covered with small infarcts and cyst scars, the cortex very thin, the pyramids illy defined, and the pelvis dilated. The same physical conditions were present in the left kidney. The bladder was empty.

A. L., man, farmer, age 54, Irish, married. Admitted June 22, 1897. Nothing of the family history could be learned except that the parents and several relatives had suffered from rheumatism. Very little of the life history of the patient could be obtained. He had worked eighteen years in a coal mine, was always intemperate and during the last few years after a spree he would be confused, irritable, incoherent and violent, with a disposition to wander away from home. When admitted he was fairly well nourished, weighed 130 pounds, had a fair appetite, but slept poorly. He had a shambling gait, there was partial paralysis of the right arm and hand, some paresis of the lower limbs and the patellar reflex was absent. He was depressed, his expression listless and vacant, and memory poor. There was paraphasia, he could not tell his name and he had difficulty in naming simple objects, although he knew their uses. He could not read or write.

Urinalysis: Amount in twenty-four hours, 1,600 c. c., sp. gr. 1,025, yellow, translucent, reaction acid, uric acid .04 per cent., urea, 1.9 per cent., indican, 3 per cent., phosphates increased, sulphates normal, chlorides, 8 per cent., no albumen, peptone or sugar. The microscopy showed nothing abnormal. He improved physically, gained in weight, the paresis improved, the knee jerk returned. The paraphasia also almost completely disappeared. Some time afterward he complained of feeling badly, had a cough and some dyspnoea. A week later these symptoms returned, he had pain in the abdomen and vomited after eating. Respiration was labored and he became feeble. He became obstinately constipated, and there was a slight elevation of temperature. A few days later he became suddenly unconscious, his face was pale, there was marked twitching of the limbs, respiration was rapid and shallow, harsh and difficult, pulse slow and full, regular and of high tension. He perspired free-

ly during the night and was better in the morning, but very restless. The urine was examined with the following result. Amount in twenty-four hours, 500 c. c., sp. gr., 1,016, acid, yellow, translucent, uric acid, .06 per cent., urea, 3 per cent., phosphoric acid, 25 per cent., indican, 2.5 per cent., sulphates diminished, chlorides, .28 per cent. There were traces of peptone, but no albumen or sugar. The microscope showed renal epithelium and a few leucocytes. He improved rapidly and soon regained his former fair health. About two months afterward, while out walking, he fell suddenly with a cry and became unconscious. His face was cyanotic, pupils contracted to a pin point; the arms and legs twitched and jerked, both sides being apparently equally affected; respiration was slow and deep, pulse 90, and feeble; the surface of the body was covered with cold perspiration. After about twenty minutes he began to regain consciousness, vomited some undigested food and was soon able to walk to the house. During the next twenty-four hours he passed 300 c. c. of urine, sp. gr., 1,016, acid, yellow, translucent, uric acid, .09 per cent., urea, 1.2 per cent., phosphoric acid, .14 per cent., indican, 2 per cent., sulphates, 1 per cent., chlorides, .6 per cent., no albumen or sugar. The microscope showed leucocytes and renal epithelium.

At the present time this patient is in fair physical health, has a good appetite and sleeps well. He is rather stupid and indifferent, but answers ordinary questions fairly well, takes a moderate amount of exercise, but does not otherwise occupy himself. The following is the result of the last urinalysis: Amount in twenty-four hours, 700 c. c., sp. gr., 1,020, acid, yellow, clear: uric acid, .03 per cent., urea, 2 per cent., phosphates and indican normal, sulphates, 2 per cent., chlorides, 12 per cent., no albumen, peptone or sugar. The microscope shows cylindroids.

S. S.—Admitted Aug. 6, 1895; born in Sweden, aged 78 years; widower, occupation, day laborer. Very little could be learned of his family history. The father died at 62 years of age of "dysentery;" the mother, at the age of 82, of "old age." One sister died of "dropsy" at nine years of age, another sister was peculiar. The mother had been hemiplegic for some years before her death. There is no record of the early life of the patient. He suffered from "rheumatism" during adult life, and for the past few years has been nervous and irritable. A short time before he was committed to the hospital, during a fit of despondency, he shot himself with suicidal intent. The following is a record of his physical condition at the time he came into the hospital. Temperature, normal, pulse, 60°, full, but intermittent, respiration fairly deep, rate, 18. The arteries are atheromatous. Depression in both supraclavicular regions; respiratory murmur

roughened over both lungs, resonance increased. He has an umbilical hernia. Tongue clean, digestion fairly good. There is some senile tremor of tongue and limbs and incoördination. Urinalysis shows sp. gr. 1023, urea, 2 per cent., no albumen, sugar or casts. He improved physically, became more cheerful, was quiet and well behaved, but grew steadily more demented. He was in bed for a month in the fall of 1896, complaining of pain in the body and limbs and weakness. During this time there was retention of urine, which was decreased in amount, of low specific gravity, contained some leucocyte casts, but no albumen. The phosphates and sulphates were normal, but the chlorides were decreased. There was no material change in his condition during the next year. He complained more or less of pain, from time to time suffered from retention of urine, was in and out of bed, feeble, but took a fair amount of nourishment and slept well. In the beginning of October, 1898, he grew more feeble and stupid, unable to help himself. There was incontinence of both urine and fæces. In the latter part of the month he developed some congestion of the lungs, coughed and expectorated. The sputa contained streptococci and staphylococci, but no tubercle bacilli. Urinalysis: Quantity in twenty-four hours, 1175 c. c., sp. gr., 1,018, acid, urea, 1.7 per cent., phosphoric acid, .0001 per cent., sulphates, 2 per cent., chlorides, 7 per cent., no albumen or sugar. Microscopy: numerous leucocytes and fibrin bands. There developed some hypostatic pneumonia with dilatation of the right heart. This condition improved after a time and he was up and about the ward for a time, but went to bed again early in the fall of 1898. He was very feeble, irritable, nervous, confused and suspicious all the time, but always much worse during the exacerbations of his physical disturbance. In December, 1898, he developed a left hemiplegia: the arm being first involved, then the leg and face. He complained of general pains, was very restless and constantly trying to get out of bed. At this time urinalysis showed the following: Amount in twenty-four hours, 600 c. c., sp. gr., 1015, urea, 2.8 per cent., phosphoric acid, .2 per cent., sulphates, 2 per cent., chlorides, 4 per cent., no sugar or albumen. Microscopy: amorphous uric acid. He grew steadily weaker and died Jan. 12, 1899.

Necropsy: there was some fluid in the subdural space, the membrane was smooth except at the vertex, where it was adherent to the skull and pia, and there was marked adhesion at the base. There was a chicken-fat clot in the anterior third of the left lateral sinus, and the others were filled with dark clots. There were 135 c. c. of cerebro-spinal fluid; the thickness of the pia was increased and the surface of the convexity was covered with opaque patches. The

vessels contained fluid blood and some gas. The brain weighed 1485 grams; 3 cm. from the longitudinal fissure on the right side, the dura and pia were adherent to the precentral convolution, the point of adhesion having the appearance of an old scar 2 cm. in diameter. There were small points of adhesion over the post central convolution on the left side, 2 cm. from the longitudinal fissure. There was serous effusion over the whole convexity, most marked over the Rolandic area on the left side. There was a subcortical cyst involving all three occipital convolutions toward their external surface, on the right side. There was marked atheroma of the arteries at the base and the carotids were aneurysmally enlarged at their exit from the bone. There was atrophy of the cortex in the region of the operculum so that the insula was partially uncovered on both sides. Aside from these external evidences of degeneration, there was no gross lesion of the brain substance, but there was well defined in the floor of the fourth ventricle the condition previously described as characteristic of death from uræmia: œdema of the ependyma of the fourth ventricle, with intense injection of the vessels. The viscera in the chest and abdominal cavity showed marked evidence of degenerative change. The right kidney weighed 120 grams. There was a large cyst on the convexity which contained 25 grams of urine. The capsule stripped fairly readily; the surface of the kidney was covered with small cyst scars. The left kidney weighed 132 grams; there was marked atrophy of kidney substance on the anterior surface exposing the pelvis. The capsule stripped fairly readily and the physical conditions were practically the same as in the other kidney. The degeneration in these kidneys was as nearly a pure atrophy, without increase of connective tissue, as I ever saw. The bladder was almost empty, its walls very much thickened and it contained about a gram of sandy particles.

I record the following case, not so much on account of the association between the condition of the urine and the symptoms manifested, as because it is typical of a class of cases very common with us. The mental symptoms are characteristic and quite similar to those manifested in cases of urinæmia associated with chronic degenerative disease of the kidney among the sane, differing only in degree.

H. M. A.—Admitted Sept. 26, 1898. Man, aged 45, Canadian, salesman, married, but divorced. The family history is negative. The parents married young, were healthy, had eleven children, four of whom are dead, cause, unknown. The patient was healthy as a child and showed no peculiarities of temper or disposition. Little information could be gained as to the history of his adult life except that he drank to excess. There are some darkly pigmented spots

over each tibia and some suspicious ulcers in the lumbar and sacral region. The ulcers healed rapidly under specific treatment. The genitalia are atrophied, but no scars could be detected. There was some ulceration along the posterior pillars of the pharynx. About two years ago he was "paralyzed." There is no history of this attack except that it came on suddenly, the patient on waking in the morning finding that he could not move his body or limbs. The paralysis gradually disappeared but he was no longer able to do any work. About three months before admission he began to be emotional, irritable, confused, could not remember what was said to him and was childish in conduct and conversation. He was in a city hospital one week before coming to St. Peter, and is said to have been violently maniacal during a part of that time. His examination on admission to this hospital disclosed the following conditions: height, 5 feet, 7 inches, weight 123 pounds, frame slender, nutrition impaired, flesh soft, skin inelastic, temperature 98.6°, pulse 58, regular and of fair volume, respiratory rate, 14. The relative heart dullness was increased downward and to the left and a musical murmur, systolic in time, was heard in the second intercostal space on the left side near the sternum. The arteries were sclerosed. There was no evidence of disease in the lungs and the appetite and digestion were not impaired. The muscles of the face and tongue were not affected, the pupils and the ocular reflexes normal, superficial reflexes present, knee jerk exaggerated, coördination in the arms and legs poor. There was some disturbance of sensation shown by hyperæsthesia to heat and delayed recognition of cold.

Urinalysis: Amount in twenty-four hours, 1575 c. c., sp. gr., 1.010, yellow, opaque, alkaline, urea, 1.5 per cent., phosphoric acid, .2 per cent., sulphates increased, chlorides increased. Albumen 2 per cent, peptone. Microscopy: numerous leucocytes. He was listless careless and indifferent, unsteady in gait, suffered from incontinence of urine, but was constipated. His memory and mental reflexes were fairly active, he conversed freely and was quiet and agreeable. During the next two months he gained twenty-five pounds in weight and was able to do light work about the sick room and ward. At times he complained of feeling ill and said his limbs ached. He would sleep during the day and said his left leg became numb when he sat long in one place. One morning soon after he was found unable to move his right arm or leg, was unable to speak and his head was drawn to the left. Temperature 103.4°, pulse 92, full and regular, respiration, twenty-four. He vomited some blood stained mucus. His bowels were confined and there was retention of urine. 775 c. c. of dark yellow alkaline urine were obtained by the

catheter, sp. gr., 1.024, urea, 2.8 per cent., phosphoric acid, .2 per cent., sulphates, 2 per cent., chlorides, 25 per cent. There was a trace of albumen but no peptone or sugar. Microscopy: nothing abnormal. (The conditions producing the high temperature accounted for the increase of chlorides at this time.) The temperature remained close to 104°. He would suddenly throw his head to the right and throw his arm to the right and backward. These movements continued for a quarter of an hour, being violent at first, but gradually decreasing to the point of complete relaxation. These convulsive movements were repeated at intervals of an hour and were accompanied by incoherent muttering. He took a little milk, but swallowed with difficulty and had to be catheterized at intervals. On the third day of the attack 1100 c. c. of urine were collected, sp. gr., 1.022, acid, urea, 3 per cent., phosphoric acid, .2 per cent., sulphates, 2 per cent., chlorides, 6 per cent., a trace of albumen but no sugar or peptone. On the fourth day the temperature came down to 99.6° and he seemed much brighter and there was some slight return of motion, first in the leg and then in the fingers and forearm. He apparently heard when spoken to, but could not answer or make any sound; was restless, appeared uncomfortable, would pull at the bed clothing and attempt to grasp the bed post. In these attempts his hand would fail to reach the object, on account of its being carried too far to the left and not far enough to reach the object. At the same time he would mutter to himself incoherently. He would reach out into space and make movements as though grasping something; then he would bring his hands to his lips and make movements as though eating and drinking. At times he would be apparently listening and again would make gestures and sounds, as though conversing with another. In another day he could repeat parts of a sentence, but there was paraphasia. Names of objects bothered him. When asked to name an object held before him, such as a pencil, key, watch, etc., he failed to find the word, but when asked what it was used for he readily described its use and then named it. He had no difficulty in reading or writing. At night he was restless and wakeful. He was very much confused for a few days. In the morning he would give an account of how he had spent the night, saying he had walked a great distance, taken a ride on a boat and been shipwrecked; imagined that people were talking about him, and at times did not know where he was. He thought he was in a different room or house, and believed that he was frequently moved about. The paralysis gradually disappeared, he passed his urine voluntarily, conversed fairly intelligently, but was still restless at night. His appetite improved, he was soon able to be up

and about, was cheerful and went to work again. Urinalysis: amount in twenty-four hours, 1600 c. c., sp. gr. 1.025, dark yellow, clear, acid, urea 2.2 per cent., phosphoric acid 15 per cent., sulphates 1 per cent., chlorides 20 per cent., no albumen, peptone or sugar. Microscopy: leucocyte casts.

The following conclusions seem to me to be warranted by our study of the clinical aspects of renal inadequacy during the past five years, supplemented by the urinalysis and post mortem verification of the deductions made:

Renal inadequacy as a temporary condition, not necessarily dependent upon histological changes in the kidney structure, is quite common, especially during adult life and after.

There is definite clinical evidence that in some people renal inadequacy is congenital and dependent upon limited potentiality (usually nervous) in the individual affected. The amount of the total solids in the urine or the presence or absence of albumen and casts, furnish no direct evidence of uræmia; but the relative proportion of the solid constituents to each other does furnish such evidence.

In my experience, when the quantity of urine is decreased below 1000 c. c., urea below 2 per cent., chlorides below 10 per cent., while the phosphoric acid is increased above 2 per cent., the sulphates above 1.5 per cent., uræmia is present or impending.

The apparent contradictions in the tables given are explained by the presence of other disease conditions in the individual at the time, which materially modified the ordinary processes of metabolism.

The fact that the usual symptoms of uræmia may not be present in cases where profound degenerative changes in the kidney are found, post mortem, is partially explained by the establishment of tolerance of the nervous system to the presence of the toxic substances in the blood and further exemplified by the finding of one or more pyramids in each kidney with its surrounding cortex in good working order.

The symptoms of chronic uræmia are most marked in cases of interstitial nephritis and it is in this class of cases that the hemiplegias and partial paralyzes with mental disturbance, most frequently occur, while in parenchymatous nephritis the sudden uræmic explosions with convulsions and stupor are most common, and in this class of cases, for obvious reasons, sudden death following renal congestion is most apt to occur. At the same time the fact must be kept in mind, that as we rarely have a purely structural or parenchymatous change in any organ, so cases of nephritis are apt to be of mixed form (especially those of alcoholic origin), and conse-

quently the clinical picture furnished by each will run into the other and be present in varying degrees in the same case.

The hemiplegias and other paralyzes due to uræmia are to be distinguished from those due to cerebral hemorrhage by the fact that all of the muscles are not involved, that the loss of power is seldom complete and that the degree to which different muscles are affected will vary from day to day; also by the fact that the complete loss of power is quite temporary although there may be a permanent paresis.

That simple interference with metabolism and the resulting loss of vitality with impairment of the nutrition of the general organism will not produce the conditions necessary to the development of uræmia, is apparent in the history of the numerous disease processes which do interfere with nutrition and impair vitality, while the sudden appearance of the uræmic storm in an individual apparently free from disease, makes it evident that there are other factors in the production of uræmia than those with which we are yet familiar. To my way of thinking the principal one of these is the nervous system and the influence it has on the activity of the kidney independently of its function as a filter. The analogy between the symptoms of shock and certain manifestations of uræmia is suggestive, and so is the close resemblance between the symptoms of apoplexy due to cerebral hemorrhage and the same condition resulting from uræmia. Then, again, failure in the functional activity of the kidney is quite commonly manifested in those vegetative organs with which it is most intimately associated in its nervous supply, as represented in the familiar gastric crises and apparently causeless attacks of diarrhœa associated with the progress of chronic interstitial nephritis. Again, pleural effusion, bronchopneumonia or pulmonary œdema, with dilatation of the right heart, may be the only symptoms manifested during the illness of the patient and the necropsy reveal extensive degenerative changes in the kidney. Now the association of the kidney with those organs supplied by the pneumogastric and phrenic nerves is principally through the suprarenal gland, and so far as my observation goes this gland is always involved in the degenerative process affecting the kidney—the change being atrophic in chronic interstitial nephritis and cystic in the parenchymatous form. This gland is also quite commonly infected by the tubercle bacillus and the pus forming bacteria when there is a similar infection of the kidney. It is further worthy of note that when degenerative change in the kidney manifests itself through disease processes in the vegetative organs, the nervous system is practically never directly involved and such nervous symptoms as do develop are secondary to the visceral

disease. The converse of this obtains where the urinæmia affects the nervous system primarily and the pulmonary œdema and cardiac failure only appear after the intoxication becomes so profound that dissolution is imminent.

While many of the conclusions offered in this paper are in a measure speculative, still they are all founded on clinical experience and pathologic study. They have suggested to me a reasonable explanation of some of the many obscure conditions met with in hospital and general practice, and furthermore, they are in line with current physiologic speculation concerning the probability that each vegetative organ has a secretion peculiar to itself, which not only affects its own functional activity but also the vitality of the organism as a whole.

### THE DUTY OF THE PHYSICIAN IN MEDICO-LEGAL EXAMINATIONS OF THE INSANE.\*

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Alienists in mental affections have, within the last decade, been seriously and severely criticised for the obscure condition in which we find the ætiology and pathology of this branch of our science today. They are accused of being behind the times, of not advancing with modern thought in other branches of professional study, of standing still while others distance them in the race.

That this is true and just, considering the gloom which a Creator has thrown around mind in its relation to matter, and that in the very nature of things correlary scientific research must be very far advanced before this highest phase of life can at all be investigated, I do not admit. This obscurity can only be penetrated by offshoots here and there from the borderland sciences and by the closest practical observation of the mental attributes, not of one or a few persons, but of generations of mankind. As the spiritual man, not the physical, is the highest work of a Creator, 'who holds the universe in the hollow of His hand,' is it to be expected that the plan of this building is to be revealed to mankind at all or in its entirety? However this may be, a broad horizon of light is being shed upon our efforts and a promise of much knowledge.

Alienists in psychiatry are largely dependent for the practical study of their specialty upon the history of cases transmitted to them from the hands of regular practitioners of medicine. The majority of those who come under their care are confined in hospitals or asylums for the in-

sane, the necessity and cause for such confinement being first determined by two physicians, under our statute, and blank forms are furnished them by the various courts of record on which their observations are recorded and transmitted, first to the court before whom the case has been brought, and finally to accompany the patient to the hospital or asylum to which he is committed. From this time on the patient, as well as his attending physician, is alienated from his life associations and environment, and, but for the history accompanying him, he is to his future medical attendant oftentimes as though he were a captive from a foreign land. His intellect clouded, his emotions perverted, his actions changed from the normal by disease, he can no longer be regarded as a trusty informant of the present or past of his life or environment, and the correct information gained from this source must be mere inference by logical deductions made from both true and false statements and observation of unnatural conduct, so that it is evident more must depend upon the accompanying recorded observations of the examining physicians at the time of the inquiry than upon observation and examination of the patient, because the information required can usually, at that time, be gained from others than the patient. Just as you must gain the history from the mother in the case of an infant, so must you, to get a reliable history of an insane, gain your reliable information from his neighbors or intimate associates.

It is this phase of medico-legal examinations that I wish to bring to your notice this afternoon, and try to study the importance of recognizing the incumbent duty that rests upon us when acting in this capacity. I use the word duty in the sense of moral obligation, not contending that as physicians we have burdened ourselves with that degree of self-sacrifice which is contended by some, requiring us to at all times put into the background personal comfort and remuneration, sacrificing every pleasure and personal profit, to be the driven slave of a thankless laity—but I do contend that what we undertake in the line of professional service is entitled to our very best effort. The obligation is not alone one of physician to patient or of man to man, but the broader one of the profession to enlightened civilization depending upon us, in this and future generations, an obligation not to be rewarded by a few dollars or cents or even by the thanks of those immediately benefited (worth more to any of us, if given in the right spirit, than any pecuniary gain) but by the conscious pleasure of lending our mite of intellectual endowment to the furtherance of knowledge and the unravelling of the mysteries of nature, purposely unrevealed as an incentive to man to devote his energies to the higher purposes of the universe.

\*Read before the Inter-County Medical Society, March 21, 1899.



I regret to say that there is a very wide ignorance amongst the profession of all that pertains to insanity. Until very recently, the subject was almost entirely ignored by all the medical colleges in their course of instruction; and the busy practitioner has never taken the time to read and inform himself on the subject (it being common consent that the patients must be cared for by alienists in an institution). It is much to be deplored that this is so, for to this more than anything else, it seems to me, is due the paucity of information contained in the usual reports made by examining physicians. Books, until recently, were devoted more to speculative metaphysics than to practical physical symptoms and histories, so that it required much time and labor in speculative fields to gain a small amount of applicable knowledge. Happily, however, now this is changed. Something of insanity is taught in all the schools of medicine and many handy text-books and hand-books that contain, in concise form, much information, can be had; so that no excuse remains to be in total darkness on the subject. Inherited tendencies have received much attention of late, and the 'correlation of crime and pauperism with insanity' has been much dwelt upon.

There seems to be undoubted truth to these propositions, but a lack of statistics to fully substantiate them. These must be gleaned from the observations and reports of the general practitioners. The friends and relatives are slow to give the information, but many of the facts are known by observation. You are the family physician, in many instances, of these people in whom insanity develops, and know the family history better than it can be obtained elsewhere. The history of antecedents is handed down in the community in which they live, and, by a little inquiry and effort, much may be gained to aid in proving or disproving what is claimed by modern sociologists in these lines.

In recording the cause of the attack, not simply what appears to be the immediate cause but also the predisposing one, which is of more value to science and always exists, should be specially mentioned. Such research would help to find out why in one masturbation, child-bearing, grief, shock, etc., is the immediate cause of mental alienation, and in thousands of others does not produce such an effect, even though it would appear more potent and adequate. The distance of the patient and physician from his former environment precludes the gaining of necessary information largely after he has been sent away for treatment.

Physicians should familiarize themselves fully with the earlier symptoms of insanity, so as, if possible, to fix the date of their appearance, as this information has so much to do with the

prognosis, which can be almost positively given in some forms upon this datum alone.

If previous attacks have occurred, care should be taken to ascertain whether recovery was complete or whether the present condition may not be simply an exacerbation of a chronic condition. This point is of great value in statistics made in an effort to compare the results of treatment and the frequency of recurrent attacks.

The practitioner should be familiar enough with insanity to know the usual course of certain conditions and to determine the nature and fixity of delusions so as to report them; much stress is laid upon the latter as to prognosis and moral treatment.

Changes in body weight should be carefully noted as showing the condition of nutrition, since the only information of the healthy weight is sometimes obtained in the report, and this should be given so that comparisons in the future may be of value. Delusions should be carefully and fully stated for it is surprising how careful to conceal them patients may become after finding themselves restrained in an asylum or hospital. This is especially so of religious delusions and those based on jealousy. Full reports should be made as to the possibility of a foundation, if ever so slight, for jealousy, as patients with this delusion fixed but suppressed are frequently apparently well and show no reason for further detention, but if liberated, may be prompted to horrible crime. Emotional derangement, of course, if permanent, is easily observed but solitary delusions of this nature are extremely hard to elicit in examination, when the patient is exalted.

In reciting the treatment that has been pursued, the moral as well as medicinal, should be given. A careful record of the physical examination should be reported, as frequently the excitement of removal brings on a disturbed period of long duration pending which such examination is impossible in the hospital. The gynecological examinations should be made by the physician at home and carefully reported, because of the freedom with which such examination will be entertained by the patient when in company of her family physician or her family or friends, as well as for reasons given above.

Inquire into each phase of the questions asked, for the information you may gain and then note it carefully. Obligation to others interested requires that if infectious disease is in the house or locality, it should be noted so as not to unnecessarily expose the hundreds of people in the hospital to which patient may be committed.

Be not satisfied only with facts to base an opinion on as regards the patient's sanity, but also seek all facts that may be of use in scientific inquiry and the future care of the patient as well as those with whom he is to be brought

in contact. Give a broad range to your questions and do not withhold information gained, even though at the time it may seem remote.

My experience of the last few years, as superintendent of an insane hospital where we have often been left in the dark because of insufficient information, has prompted the above in the hope that you may be given incentive to aid those who may be dependent upon you, as the specialist is in the field of research, more than has been your custom; and that you may not censure too severely our shortcomings in certain directions, when it may be possible a measure of the responsibility should be shared by you.

I thank you for your kind attention.

### THE TREATMENT OF NASAL CATARRH BY THE GENERAL PRACTITIONER.

BY JOHN McLEAN, M. D.,

St. Paul.

Probably the question most frequently asked of the general practitioner, and the one most difficult to answer in a manner satisfactory to the patient, is: "Can you cure catarrh?"

This word, catarrh, in the minds of the laity, covers all that group of diseases affecting the nasal and post-nasal passages, which result in either an increase or decrease of secretion. The true nature and cause of the disease is ignored, or not understood, and the prominent symptom is seized upon to designate the condition. Therefore, the practitioner must either enter upon a long explanation of the etiology, pathology, etc., of the various affections, with the result of thoroughly mystifying the patient, or else he must give a non-committal answer, which is apt to leave the impression that he does not know what he is talking about.

The city practitioner will usually refer his patient to some competent specialist, and, having done this, his responsibility ceases.

In the small town, or in the country, the case is different. Here there is no specialist available, and the services of one can be secured only by an expensive trip to some neighboring city. Hence, in the majority of such cases, the family physician must do something to cure his patient, or at least relieve him from the symptoms of which he complains. If he does not do this the patient will begin to dose himself with the various quack nostrums which load the druggist's shelves, many of which contain large quantities of cocaine or other deleterious drugs.

Every general practitioner should, therefore, have some knowledge of the anatomy and physiology of the nose and naso-pharynx, and be able

to make an intelligent examination of those regions. He should possess a proper dilator for the examination of the anterior nares and be able to tell whether there exist spurs, hypertrophied turbinates, polypi, or other obstructions to breathing, or whether there is an atrophic condition. I say nothing of deflected septum, for, in my experience, this is present in the great majority of cases, and, unless excessive, rarely forms an obstruction to nasal breathing.

The use of the rhinoscopic mirror is not particularly difficult, and a little experience will enable one to ascertain the presence of adenoid growths or post nasal polypi.

A simple inspection of the pharyngeal wall by the use of a tongue depressor will show the presence of the granular condition associated with post-nasal catarrh, or the enlarged follicles from the same cause.

It is unnecessary to go into the etiology, pathology, or symptomatology of the various diseases of the nose and throat. Any good work on the practice of medicine will contain all these. The question is, what can the general practitioner do for the relief of these patients?

In the first place a small outfit of instruments is needed. This will consist of a head mirror, a nasal dilator, one or two applicators for the anterior nares, the same for the naso-pharynx, a rhinoscopic mirror and two or three spray tubes.

Of course any obstruction to breathing, such as spurs, etc., requires surgical treatment and had better be left to the specialist, but even these cases, although they cannot be cured by medicinal applications, can be greatly relieved, and kept in comparative comfort.

One of the spray tubes should contain an alkaline, antiseptic solution, such as Dobell's or Seiler's. The latter is the most convenient for office use, because the tablets for making it can be obtained through the druggist. Another tube should contain a four per cent. solution of cocaine, and the third an oily spray containing menthol. A solution of the strength of ten grains to the ounce of albolene is a very good one.

The office treatment should consist in the thorough cleansing of the anterior nares and naso-pharynx with the alkaline spray. Then, in the case of an acute rhinitis, the cocaine spray may be used and this followed, in a minute or so, by the oily spray. In a chronic case, after cleansing the nares and naso-pharynx, the latter being accomplished by a spray through a post nasal tip, an application of some astringent solution should be made with an applicator. For this purpose the officinal glycerole of tannin will be found a very satisfactory drug. This treatment can be occasionally varied with advantage to the patient, by using for the anterior nares a saturated solution of iodoform in ether, and, for

the naso-pharynx, a solution of silver nitrate in distilled water, forty grains to the ounce. These office treatments should be given twice or three times a week and persevered in until the desired effect is obtained.

It is necessary to combine with this office treatment some home treatment which can be carried out by the patient. This should consist of some cleansing solution, used either in a spray or douche.

As a rule a douche will cleanse the mucous membrane of the nasal passages more thoroughly than a spray, in the hands of the patient, but the ordinary nasal douche is open to serious objections. Unless very carefully used the solution is apt to be forced through the Eustachian tube into the middle ear, an accident which is probably responsible for many cases of otitis media.

I have lately been using a little instrument called the Bermingham Nasal Douche, which is free from most of the objections to the ordinary nasal douche. It consists simply of a tube with a nasal tip, from which the medicine is allowed to run into the nose, this being accomplished by the tipping back of the head, thus elevating the instrument.

Probably the best medicine for home treatment is Glyco-Thymoline (Kress). I have been using this in my practice lately and am much pleased with the results. In order to get the best effect it should be used diluted with warm water in the proportion of one part of the medicine to three of water. I have selected two or three cases, in which this treatment has been used, to illustrate the results obtained.

Case I.—E. G., dentist, aged 28, suffering from an attack of acute coryza. He had no treatment except the Glyco-Thymoline, used with that Bermingham douche. Starting with a solution of one part of Glyco-Thymoline to five of warm water, he rapidly increased the strength until he was using equal parts. The relief was prompt and permanent.

Case II.—H. M., stenographer, age 20, chronic catarrh of nose and naso-pharynx. The office treatment consists of cleansing with Seiler's solution and application of tannin glycerole. The home treatment is Glyco-Thymoline, one part to three of warm water. He has been under treatment for six weeks and is practically cured.

Case III.—L. D., school girl, age 13, chronic catarrh of nose and naso-pharynx. Has adenoid growth in vault of pharynx, but parents are not willing, at present, to have her undergo operation for its removal. Treatment the same as the previous case. After three weeks' treatment she is very much improved, but of course, it is too early as yet, for a cure. Undoubtedly an operation will be necessary in this case before a per-

manent result can be obtained. In the meantime the treatment keeps her comfortable.

These three cases represent fairly well the average run of cases which the general practitioner is apt to meet in his daily practice. By judicious treatment he can benefit them and save them from falling into the hands of unscrupulous advertising quacks, who would rob them of their money without in any way benefiting them.

Soft Chancre—The Paris correspondent of the Cincinnati Lancet-Clinic advises to transform the virulent sore into a simple wound by cauterizing it with one of the following caustics: Chloride of zinc in a deliquescent state or in solution (1:10); nitrate of silver in solution (1:20); tartrate-ferrico of iron in solution (1:16).

A sufficiently prolonged elevated temperature may attenuate or even destroy the virus of the chancre. Advise bathing the penis for a quarter of an hour twice each day in water as hot as can be comfortably borne.

When the virulence of the chancre appears exhausted cease cauterization and use dressings of iodoform, salol, aristol or dermatol.

Phagedenism may be kept down or checked by general tonic medication and caustic application. Phenol gives good results when applied.

In order to prevent the suppuration of a bubo apply moist dressings with boric-acid waters, prescribe rest in bed and warm baths. If pus is collected it may be evacuated by a capillary puncture or a small perpendicular incision at the navel arch; afterwards it should be evacuated as completely as possible of its pus, then injected with a solution of nitrate of silver. The bubo, once opened, should be cauterized with chloride of zinc (1:10) and dressed with iodoform.

When numerous ganglions are infected and when discharges occur through fistulous openings, surgical aid is needed, not before.

Grawitz says that one of the chief difficulties in the way of the successful treatment of pernicious anemia is the improper nourishment of the patient on account of his anorexia. It is necessary to wash out the stomach and bowels and to give saline laxatives to correct this. If the urine contains an increased amount of indican it is a sign that the intestines contain putrefactive material and internal antiseptics, such as calomel and salol, should be given. To correct the hyperacidity of the stomach bitters should be prescribed, or the wine of condurango, wine of pepsin, or porter. It is indispensable that the physician have an oversight of the fluids taken by the patient. Iron is useless. Arsenic is the only drug which has a direct beneficial action. Massage, exercise, and appropriate gymnastics may be of some benefit. Infusion is only indicated in women who have lost a great deal of blood in induced labor.—Medical News.

# NORTHWESTERN LANCET.

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## THE REPORT OF THE STATE BOARD OF HEALTH.

The volume just issued contains two biennial reports covering the years 1895-1898, making altogether a work of some five hundred pages. It is made up of the quarterly reports of the secretary and executive officer, of the director of the bacteriological laboratory and of the director of the veterinary department. To these reports are added a number of papers on public health matters that have been read at various meetings during the past two years, the object of the board being to give to the report as high an educational value as possible, and not to make it a merely perfunctory statement of work done.

The work of the state board of health nowadays is a great business, including as it does not only close watch upon the public health, the keeping of extensive records and the gathering of a great amount of statistical information, but also much original work in the way of research. The last report shows particularly active research upon the early diagnosis of typhoid fever, upon tuberculosis in men and cattle and upon the subject of rabies, the last a long and difficult task involving experimental work of great delicacy upon hundreds of animals. As is well known the result of the investigation of rabies was to demonstrate its presence by the best test known, that is experimental inoculations carried through a series of animals. The twenty cases of suspected rabies which were made the subject of investigation have been tabulated in a convenient form for reference and are a valuable addition to the literature of the subject.

Bacteriological examinations for the diagnosis of diphtheria and typhoid fever have been made in great numbers by the board during the past two years, this branch of the work having greatly increased in importance. Examinations of sputum for tubercle bacilli are now made by the board only for the benefit of local health boards which propose to take measures looking toward the surveillance and control of the disease. The reason for this is that some of the private consultants in the disease objected that the board should do gratuitously work for which the patient ought to pay a fee, unless the board's examinations could be made directly protective of the public health.

During the past two years one of the members of the board has been a veterinarian, holding also the degree of M. D., who has had charge of the veterinary department and makes a special report for his branch of the work, which is one that interests the medical profession because it includes diseases such as bovine tuberculosis and glanders that are a direct menace to man. The work of testing cattle with tuberculin and inoculating horses with mallein for the diagnosis of glanders has been extensively pushed. The report says that during the year 1897 three hundred and ninety-one horses were tested with mallein, and of these one hundred and eighty were killed or died of glanders under observation.

Among the papers upon matters bearing upon sanitation written by members of the board and included in the report is one by the secretary upon the quarantine of measles which is open to some criticism. In this paper the quarantine of measles is condemned, and rightly so, for the reason, first that it is a complete failure. The matter might be allowed to rest here as in the case where the lawyer stated to the court that there were ten good reasons why his client did not appear, the first of which was that he was dead, whereupon the court excused the lawyer from reciting the other nine. But in this case one of the reasons brought forward for not quarantining measles is that it is undesirable to protect children from the disease, but better that they should have it and have it over while young rather than perhaps take the disease later in life, when it will be much more inconvenient for business and other reasons. It is not uncommon to

find parents intentionally exposing their children to the disease for much the same reasons as those just alluded to, or more particularly perhaps because of the popular belief that measles is more dangerous in the adult than in the child. Is it not rather a startling proposition to favor the spread of a disease whose death rate is given by different authorities as from two or three to twelve or fifteen per cent? A risk of even one chance in fifty is not to be lightly taken and certainly some people get through life without taking the disease. What will be the feelings of the physician who encourages the voluntary exposure of children to the disease when his fiftieth case dies, and who will persuade the parents that the best thing was done?

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A pamphlet lately received bears the title "Cramer's Revision of Medical Lists, U. S. and Canada, Reporting Additions, Removals and Deaths." The circular is stated to be issued "in the interest of advertisers who have anything to sell to the medical profession." Turning to the report upon Minnesota, the following physicians are found listed as having removed from Minneapolis: Drs. O. A. Fliesburg, A. F. Irwin, Edw. McI. Morton, W. B. Pince (Pineo?), Chas. A. Smith, Falk Tennyson and H. D. Wood, Jr., while in St. Paul, Dr. Talbot Jones is described as dead, those set down as having removed being Drs. T. F. De Witt, W. D. Kelly and P. Marchand. As most of these statements are entirely wrong, Cramer's Revision is a pamphlet that would better go out of print at the earliest possible moment.

## REPORTS OF SOCIETIES.

### Minnesota Academy of Medicine.

R. O. BEARD, M. D., Secretary.

Stated meeting Wednesday evening, March 1, 1899, at the West Hotel, Minneapolis; the president, Dr. C. G. Weston, in the chair.

Dr. H. A. Tomlinson, of St. Peter, presented a paper, entitled,

"SOME OF THE ASPECTS OF RENAL INADEQUACY."

See page 144.

The discussion upon the paper was opened by Dr. Abbott, who asked that the author of the paper would throw some light upon certain renal conditions upon which he had not dwelt, viz.: a class of cases, among women, in whom the urine

will be, for long periods of time, of almost the specific gravity of water, but without any other abnormal feature; another class, equally unmarked by any associated symptoms, in whom the urine will show a very high specific gravity, and a third class in whom the urine is perfectly normal, but which show, post mortem, marked renal degeneration.

Dr. W. A. Jones, of Minneapolis, said that the paper deserved a fuller discussion than he was competent to give it. It was impossible for one in private practice to make such exhaustive examinations as Dr. Tomlinson had undertaken. Whilst the paper had established certain points which served to explain many obscure cases of renal disease, it did not wholly satisfy him. He thought that cases had been studied in this connection, in which the renal disorder was associated with, and probably due to general disease of the arterial system. It was a question in these cases whether the condition of the kidney was in the relation of cause or effect to the arterial disease. It was not uncommon to see cases of polyuria unassociated with any other renal symptom.

Dr. H. B. Sweetser, of Minneapolis, called attention to the very large percentage of cases in Dr. Tomlinson's series in which sugar was present. He asked if this was to be accounted for as a result of some degeneration incident to nervous disease.

Dr. A. W. Dunning, of St. Paul, inquired what method Dr. Tomlinson had used in the determination of the percentage of urea.

Dr. A. B. Cates, of Minneapolis, said that he would like to get some suggestions as to the treatment of renal inadequacy. In many cases of albuminuria, persisting for months, milk diet alone seemed to serve any useful purpose.

Dr. Wm. Davis, of St. Paul, suggested that the discussion of the paper indicated that the members, himself among the number, felt themselves in the position of students toward the author of the paper, whose exhaustive researches certainly entitled him to speak with the authority of the teacher. The question of renal inadequacy was an important one in life insurance examinations. Dr. Tomlinson's studies seemed to show that a low specific gravity of the urine was not to be depended upon as an indication of disease and yet it commonly led to the rejection of an applicant without any other evidence of disorder.

Dr. J. W. Bell, of Minneapolis, thought that the paper opened up a broad subject, only a part of which had been touched upon by the author. Some things were lacking to a correct judgment of the value of these researches. The daily diet and the water supply of those patients whose urinary analyses had been presented should be known.

Renal insufficiency is, in many cases, on a par with cardiac insufficiency. People start in life with a certain capital or margin of functional power, but a question of personal idiosyncrasy often comes in. The character of the cases studied by Dr. Tomlinson must also be taken into the account. The number of cases showing sugar was certainly unusually large. Whilst albuminuria is a frequent condition and is sometimes transient, its presence should direct close study to the kidney for the possible discovery of structural change.

Dr. R. O. Beard, of Minneapolis, emphasized the physiologic fact, upon which Dr. Tomlinson had insisted, that the kidney is an organ of variant function. It is not only eliminative, but elaborative of waste material. This elaborative function is possessed, however, by only a portion of the kidney tubule.

The glomerulus has the distinctive function of a filter. In this capacity, it is delicately responsive to changes in blood pressure and blood volume. Hence the vaso-motor system is, to a large degree the determinant of its excretory activity. Its control was illustrated by, and at the same time explained the specific gravity cases referred to by Dr. Abbott. The urine, of large quantity and very low specific gravity, is the result of marked vaso-dilatation in the renal areas; the urine of scanty amount and high specific gravity means simply vaso-constriction, provided no other symptoms of renal disorder appear.

But the glomerulus is not merely a filter—it is a physiologic filter. It is endowed with the property of selection. Its cells determine the kind and the quantity of the materials which they filter out.

Moreover, the kidney is an organ of drainage of waste material derived from various sources. It eliminates not only the variant products of tissue metabolism; it is also a short route for the disposal of dietetic debris absorbed from the intestinal tract. The occurrence of dietetic glycosuria is an illustration of this function. Metabolic conditions, in general, and dietetic conditions, in particular, must be considered in estimating the significance of urinary elements. To regard the kidney as the responsible cause of all the variant features of its output is as irrational as to attribute the impurity of a water supply to the conditions alone of the faucet through which it flows.

Renal inadequacy may be due, then, to eliminative failure, to elaborative failure, to the failure of the selective filter, to disturbances of blood pressure and volume, or to the character of the materials, derived either from the tissues or from the alimentary tract, which are presented to it for filtration.

Dr. C. G. Weston, of Minneapolis, said, that in looking over Dr. Tomlinson's statistics, he noted a very small percentage of sugar in many of these cases. He would like to ask Dr. Tomlinson if he could afford any explanation of the frequency of these cases of slight diabetes.

Dr. C. H. Hunter, of Minneapolis, congratulated Dr. Tomlinson upon the efficient use of such a splendid opportunity for study. Nevertheless, he thought that his hearers might go away with some doubt as to how they were to determine renal inadequacy. He called attention to two statements of the paper: the first, upon a quotation from Cabot, to the effect that a number of patients exhibit albumen and casts in whom autopsy reveals no pathological condition of the kidney; and, vice versa, that, despite the absence of albumen and casts, pathological conditions are often proved to exist by subsequent post mortem evidence. The first part of the statement he doubted the soundness of, the contra experience, he believed was occasional.

The second point which he wished to raise was that in interstitial nephritis there is an involvement of the suprarenal bodies. If any such relation exists and if these cases prove it by autopsy, there ought to be associated symptoms which would indicate the fact. He thought room might exist for another paper on this subject.

Dr. Tomlinson, in closing the discussion, said that he was aware that his paper was necessarily incomplete. It would require a text-book to deal with the subject exhaustively. He had not attempted to discuss renal diseases. He was simply dealing with the questions of renal inadequacy from a neuropathic standpoint. The condition was sometimes dependent upon renal disease and sometimes upon the simple inability of the kidney to dispose of the incomplete products of tissue metabolism which are brought to it. There may sometimes be a complete suspension of tissue waste; sometimes there may be a failure in the elimination of water.

With no symptom of disease of the kidneys, but with a disturbance of the normal relations of the constituents of the urine, the patient may be on the verge of uræmia. On the other hand, albumen and casts, the evidences of renal disease, may be present in the urine, without danger of any uræmic climax.

His paper was written, also, to show the influence of nervous disease upon the kidney. In all cases of degeneration it should be remembered that we deal simply with exaggerations of those conditions which prevail in the non-degenerate. These exaggerations are to be considered in the light of that fact, just as a microscopic study will aid a microscopic examination. He did not, however, regard renal inadequacy as a common condition among the insane by any virtue of their insanity; he thought that

psychologic activity was more apt to induce it. Certainly as between the vegetative and the psychologic man, the tendency to renal inadequacy was on the side of the latter.

He could not undertake to explain all the chemical relations which exist between the urine and the tissues. He did not doubt that renal inadequacy was sometimes due to the effect of the retention of abnormal waste products upon the nervous system.

He was glad to attempt the answer of any questions that had been asked, but he felt that the real subject of his paper had not been discussed. He wished, therefore, to rehearse the conclusions of the paper.

In the matter of treatment, he commonly used the methylene-blue in the treatment of albumen and casts in parenchymatous disease; the chloride of gold and sodium, the lactate of strontium and the suprarenal extract, in chronic interstitial nephritis; and hot packs, strychnia and large supplies of water in uræmic convulsions.

Upon motion, the Academy adjourned.

## BOOK NOTICES.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M. D. (Col.), Professor of Dermatology in the Woman's Medical College of the New York Infirmary and in the Medical Department of the University of Vermont. etc. Illustrated. Third Edition, Revised and Enlarged. New York and Phila. Lea Brothers & Co. 1899. [Price, \$2.50, net].

Although the second edition of this book is but a couple of years old, the revised work has been considerably augmented without changing its general plan, which has proved to be highly acceptable to the profession as shown by the rapid sale of the book.

Its distinguishing features are the alphabetical arrangement, which was adopted for the purpose of convenient reference and the separate formulary at the end of the volume. Classification, that subject so dear to the heart of the dermatologist has not been neglected, but is dealt with only at the beginning, the alphabetical arrangement, of course, preventing the grouping of the detailed descriptions of the various disorders.

Diseases of the Ear, Nose, and Throat and their Accessory Cavities. By Seth Scott Bishop, M. D., D. C. L., LL. D., Professor of Diseases of the Nose, Throat and Ear in the Illinois Medical College; etc. Second Edition. Thoroughly Revised and Enlarged. Illustrated. Phila., New York, Chicago; The F. A. Davis Company. 1898. [Price, \$4.00, net.]

A distinguished London teacher has said that "the ear begins at the anterior nares," and in this view he will have the support of the best medical opinion. Since it is admitted that sore throat is a common cause of ear trouble it follows that the combination of diseases of the ear, nose and throat in a single volume is a most happy one.

It is not long since Dr. Bishop wrote his first edition, a favorable notice of which appeared in these columns. The present edition differs from the first chiefly in the amplification of some of the chapters, containing but two new topics, both of which, however, are quite unique: "Related Diseases of the Eye and Nose," and "Life-Insurance Affected by Diseases of the Ear, Nose and Throat."

### GERRISH'S ANATOMY BY AMERICAN AUTHORS.

Gerrish's forthcoming Anatomy by American Authors promises to be the work for which teachers and students have long been looking. Its editor, Prof. F. H. Gerrish, of Portland, has selected as his fellow-contributors leading anatomists throughout the country, wisely restricting their number to accord with the best division of the subject, gaining thereby unity in result joined with the highest authority. The list includes Professors Bevan of Rush in Chicago, Keiller of the University of Texas, McMurrich of the University of Michigan, Stewart of the University-Bellevue College in New York, Woolsey of Cornell Medical College likewise in New York, and Gerrish himself, who is not only editor but perhaps the largest contributor.

The plan of the work judiciously avoids the unimportant and exceptional, reserving its space for those portions of anatomical knowledge which are necessary to the intelligent study of physiology, surgery and internal medicine. The authors have endeavored to stand in the place of a living teacher to the student, selecting such portions as will be of actual service to the pupil in his study and to the practitioner in his subsequent clinical work, clarifying obscurities, giving most help in the most difficult parts, and illustrating everything by all available methods. Pictorially Gerrish's Anatomy will be by far the most lavish work ever offered on a subject which can already boast of many elaborately illustrated text-books. The engravings number about one thousand, their size is large enough to make visible every detail, colors have been employed more liberally than ever before, and lastly the labels of the parts have been conspicuously engraved upon them whereby a glance gives not only their names but also their position, extent and relations, obviating entirely the slow, toilsome and wasteful mental processes necessitated where only reference letters are employed.

In an early issue we shall give our readers a review of the book itself.

## MISCELLANY.

### AMERICAN MEDICAL ASSOCIATION.

#### Annual Announcement.

The Fiftieth Annual Session will be held in Columbus, Ohio, on Tuesday, Wednesday, Thursday and Friday, June 6, 7, 8 and 9, commencing on Tuesday, at 11 a. m.

"The delegates shall receive their appointment from permanently organized state medical societies, and such county and district medical societies as are recognized by representation in their respective state societies, and from the medical departments of the army, navy, and marine-hospital service of the United States.

"Each state, county and district medical society entitled to representation shall have the privilege of sending to the association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number: Provided, however, that the number of delegates for any particular state, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the code of ethics of the association."

Members by Application.—Members by application shall consist of such members of the state, county and district medical societies entitled to representation in this association, as shall make application in writing to the treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the amount of the annual membership fee, \$5.00. They shall have their names upon the roll, and have all the rights and privileges accorded to permanent members, and shall retain their membership upon the same terms.

At a recent meeting of this association the following was unanimously adopted:

Whereas, the American Medical Association did, at Detroit, in 1892, unanimously resolve to demand of all the medical colleges of the United States the adoption and observance of a standard of requirements of all candidates for the degree of doctor of medicine which should in no manner fall below the minimum standard of the Association of American Medical Colleges; and

Whereas, this demand was sent officially by the permanent secretary to the deans of every medical college in the United States and to every medical journal in the United States, now therefore the American Medical Association gives notice that hereafter no professor or other teacher in, nor any graduate of, any medical college in the United States, which shall after January 1, 1899, confer the degree of doctor of medicine or receive such degree on any conditions below the published standard of the association of Ameri-

can Medical Colleges, will be allowed to register as either delegate or permanent member of this association.

Each delegate or permanent member, when he registers, is requested to record the name of the section, if any, that he will attend, and in which he will cast his vote for section officers.

Secretaries of medical societies, as above designated, are earnestly requested to forward, at once, lists of their delegates.

Also, that the permanent secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the secretaries are, by special resolution, requested to send to him, annually, a corrected list of the membership of their respective societies.

Amendment, Offered by W. L. Willis, Cal.

Constitution, Art. IV.—Officers. Amend to read: "The following officers, viz.: President, four vice-presidents, treasurer, librarian, secretary, assistant secretary, and chairman of committee of arrangements, shall be nominated by a special committee of one member from each state represented at the meeting, and shall be elected annually by the vote on a joint ticket, and shall hold office until their successors are elected."

#### Sections.

"The chairman of each section shall prepare an address on the recent advancements in the branches belonging to his section, including such suggestions in regard to improvements or methods of work as he may regard important and present the same, on the first day of the annual meeting, to the section over which he presides. The reading of such address not to occupy more than forty minutes."—By-Laws.

"A member desiring to read a paper before a section should forward the paper, or its title and length (not to exceed twenty minutes in reading) to the secretary of the section, at least one month before the annual meeting at which the paper or report is to be read."—By-Laws.

#### Officers of Sections.

Practice of Medicine.—Frank Billings, Chicago, chairman; Carroll E. Edson, Denver, secretary.

Surgery and Anatomy.—W. J. Mayo, Rochester, Minn., chairman; M. L. Harris, Chicago, secretary.

Obstetrics and Diseases of Women.—A. H. Cordier, Kansas City, Mo., chairman; W. D. Haggard, Jr., Nashville, Tenn., secretary.

Materia Medica, Pharmacy and Therapeutics.—Thomas H. Stucky, Louisville, Ky., chairman; Leon L. Solomon, Louisville, Ky., secretary.

Ophthalmology.—Casey A. Wood, Chicago, chairman; Charles H. Williams, Boston, secretary.



Laryngology and Otology.—Emil Mayer, New York, chairman; Christian R. Holmes, Cincinnati, secretary.

Diseases of Children.—Henry E. Tuley, Louisville, Ky., chairman; L. D. Boogher, St. Louis, secretary.

Physiology and Dietetics.—J. Weir, Jr., Owensboro, Ky., chairman; Lee Kahn, Leadville, Colo., secretary.

Neurology and Medical Jurisprudence.—Frederick Peterson, New York, chairman; Hugh T. Patrick, Chicago, secretary.

Cutaneous Medicine and Surgery.—W. T. Corlett, Cleveland, Ohio, chairman; J. M. Blaine, Colo., secretary.

State Medicine.—Arthur R. Reynolds, Chicago, chairman; W. P. Munn, Denver, Colo., secretary.

Stomatology.—George V. I. Brown, Milwaukee, Wis., chairman; Eugene S. Talbot, Chicago, secretary.

Wm. B. Atkinson, Permanent Secretary.

### THE PARIS EXPOSITION.

Paris will soon again be the attraction of the world. American parties are already being made up to visit the Exposition which is to be held there next year, and for the benefit of those who wish to meet folks from their own country a "pension," as the French call it, is to be established where the recognized language will be straight American. It will be under the care of Professor Arthur Wisner and his wife, who, though natives of France, have been resident for some years in New York, and are thoroughly acquainted with American ways and customs. Being well known to a number of prominent doctors the professor and his wife hope that their establishment will become the headquarters of the American medical profession. They have secured a mansion in the neighborhood of the Bois de Boulogne, and will have it fitted up in such a way as to provide a comfortable home for their guests. The professor has already made arrangements for accommodating a considerable number of prospective visitors, and he would be pleased to hear from others before he leaves for Paris, as he intends doing shortly. For the present he may be addressed at No. 605 Madison avenue, New York City.

### PROGNOSIS IN PNEUMONIA BY BLOOD COUNT.

According to Osler, a fairly accurate prognosis can be made in pneumonia by the blood count. Absence of leucocytosis, or a leucocytosis of 50,000 or over, are evidences of an almost certain fatal termination.—Western Clinical Recorder.

## NOTES.

### Vapor Massage.

Patents covering medical and surgical appliances were formerly looked upon with much disfavor by the medical profession. This rather narrow view has given place to a more liberal one, which recognizes the right of the inventor to the same protection as is given in a copyright to the author of a medical book.

A very valuable invention of this class is the subject of a recently issued United States patent. The object of this invention is to supply a ready means for the treatment of respiratory and aural affections with compressed Nebulized Vapor, to which the inventor has applied the name, Vapor Massage.

The apparatus, which is manufactured by the Globe Manufacturing Company of Battle Creek, Michigan, has been thoroughly tested by many prominent specialists. The marked success which has attended its use has already resulted in the appearance of several imitations, which are infringements of the patent referred to above.

Intending purchasers will do well to write the Globe Manufacturing Company for full information before placing orders.

### Treatment of Obesity.

To illustrate the rapid reduction of flesh produced by thyroid treatment, the following case taken from an article by Dr. M. Weiss, of Vienna, published in the Wiener Medicinische Wochenschrift, No. 41, 1898, will prove of interest: "A hotelkeeper, 45 years old, a gourmand and heavy drinker, presented the typical picture of the plethoric form of obesity; symptoms of stagnation in the abdominal organs, bronchial catarrh; weight 103 kilos. During thirty-six days he received 98 tablets of iodothyrene. In order, however, that in this case of obesity from over-feeding the action of iodothyrene should not be neutralized by immoderate eating and drinking, it was considered necessary to supplement the medicinal treatment with an appropriate regimen. The times of meals were, therefore, regulated, fatty and sweet foods were permitted only in small quantities, and the supply of alcoholics was reduced to one-half to one liter of beer and one-quarter of wine pro die. All severe muscular exertion was avoided at the beginning of the treatment. The results of this treatment were excellent. The reduction of the bodily weight after the first week amounted to five kilos, after the second to 8½, after the third to 10½, and after the fourth to 12 kilos. The symptoms of stasis had in great part disappeared, the condition of bodily strength was satisfactory, and the patient was able to take walks of several hours' duration, and to make a tour through the mountains."

### Grip and its Allies.

The prevalence of grip and pulmonary troubles leads us to call special attention to the value of Blennostasine in treating these affections. When this remedy is given in the earliest stage of grip, the attack is usually aborted, and in any case its duration is cut remarkably short. Blennostasine relieves the excessive mucous discharge in a few hours, and also the headache which frequently accompanies colds of the influenza type. Its antifebrile action is particularly valuable in severe cases of grip, and it is free from the toxic of belladonna and the synthetic drugs.

### Chronic Bronchitis.

A physician of extensive practice who has devoted many years to the study of respiratory troubles, writes that he believes he has found the most reliable treatment yet devised for obstinate bronchitis: "My sister, Mrs. M., had been under treatment during ten years for chronic bronchitis without definite improvement. She was extremely weak and emaciated and had frequent paroxysms of coughing with copious opaque yellowish expectoration streaked with blood. There was pronounced Angina, with a sense of weight and tightness across the chest. About six weeks ago I began administering a Petroleum Emulsion made by the Angier Chemical Company of Boston, in teaspoonful doses, mixed with two ounces of milk. In three days the cough entirely vanished and the pulse became full and regular. In six weeks she has gained eighteen pounds, and declares herself cured. This is only one case among many."

### Uses of Iodia.

Case 1.—M. S., fifty-two years of age, male, was some years afflicted with an obstinate form of erythema, probably of specific origin, which heretofore had resisted the usual constitutional and local treatments. The itching of the eruption was intolerable, the anæmia very pronounced—the whole constitution run down. Six weeks' medication with Iodia, supplemented by extract of malt and cod-liver oil, brought the case under control. I attribute the good effect of Iodia in this, as in other cases, not so much to its mineral ingredients (potass. iodide and ferri phosphate) as to their combination with the fresh principles of vegetable alteratives. I, for my part, believe that only the extracts of the green or fresh plants are reliable for therapeutic effects, the common fluid extracts of the dried plants having proven mostly inert in my hands.

Case 2.—R. W., æt. 38; female; presented glandular enlargements complicated with functional disorders (dysmenorrhœa). The persistent administration of Iodia brought marked improvement and patient is on a fair way to recovery.

### Neurotic Anodyne and Hypnotic.

There is no question, Neurosine is positively the most powerful and safest Neurotic, Anodyne and Hypnotic known to the profession. There can be no detrimental after-effects as Neurosine does not contain Morphine, Chloral or Opium. Par-excellence in the treatment of Epilepsy, Chorea, Neurasthenia, Migraine, Neuralgia and all forms of Convulsive and Reflex Neurosis. Produces natural sleep. Beware of substitution.

### Otitis.\*

By DR. HUGH BLAKE WILLIAMS,  
Chicago, Ill.

The more I see of chronic suppurative inflammation of the ear, the more convinced do I become that the element of chronicity is due to lack of thoroughness in treatment. The method of procedure mapped out below will not succeed in cases where necrosis has occurred, but in all others it will reduce the duration of treatment from months and weeks to days.

The patient is placed upon the side with the affected ear up. The concha is filled with Marchand's Hydrozone, which is allowed to remain until it becomes heated by contact with the skin, when, by tilting the auricle, the fluid is poured gently into the external canal. The froth resulting from the effervescence is removed with absorbent cotton from time to time and more Hydrozone added. This is kept up until all bubbling ceases. The patient will hear the noise even after the effervescence ceases to be visible to the eye.

Closing the external canal by gentle pressure upon the tragus forces the fluid well into the middle ear, and in some instances will carry it through the Eustachian tube into the throat. When effervescence has ceased the canal should be dried with absorbent cotton twisted on a probe and a small amount of pulverized boracic acid insufflated.

The time necessary for the thorough cleansing of a suppurating ear will vary from a few minutes to above an hour, but if done with the proper care it does not have to be repeated in many cases. However, the patient should be seen daily and the Hydrozone used until the desired result is obtained.

Care is necessary in opening the bottle for the first time, as bits of glass may fly. Wrap a cloth about the cork and twist it out by pulling on each side successively.

In children and some adults the Hydrozone causes pain, which can be obviated by previously instilling a few drops of a warm solution of cocaine hydrochloride. In this note it has been the intention to treat suppuration of the ear rather as a symptom and from the standpoint of the general practitioner.

\*Abstract from The Alkaloidal Clinic of Chicago for January, 1899.

## ORIGINAL ARTICLES.

## THE CHOICE OF A CLIMATE FOR CONSUMPTIVE PATIENTS.\*

BY R. M. PHELPS, M. D.,

Assistant Superintendent, Rochester State Hospital,  
Rochester, Minn.

I wish to present to you a brief study upon the question of the best climate for consumptives. I would do this, not from the ground of great experience in treating the disease, but from certain convictions developed in such an earnest study of the subject as best comes from a personal desire to secure the best for one's family. In such a study I looked up along various lines. I looked over thirty to forty articles in the prominent current journals, and found in almost every case each physician telling of the value of his own locality, rather ignoring others. The more one read, the less able one was to select. In a book of reference on Southern California, the same was true, although less prominently. The articles of Charles Dudley Warner, picturing this country very attractively as the Italy of America, have done very much to attract people to Southern California. Arizona and New Mexico have not so much commendatory literature, possibly it seemed to me, because there are no large cities with prominent physicians interested in promoting the ingress of patients. Asheville and Carolina points were mildly praised in several of these articles. The Adirondacks and certain other points each received a certain amount of commendation. I found no article which, in a temperate way, attempted to strike a balance between the climate of various localities.

Turning from current literature to reference books one was somewhat better satisfied, yet many and various places were commended and there was no adequate summing up. Writing to various physicians residing in states considered as health resorts, the answers received were chiefly in presenting the claims of their own localities.

I have, however, obtained a number of opinions from non-medical people, who yet were thoroughly acquainted with the different localities, and more especially, two persons, acquaintances of the family. One intelligent man, who had commenced in 1878 to seek a climate on account of consumption and who had visited various localities, gave me the most valuable information. He was thoroughly intelligent, and from a non-

medical standpoint had studied the question in its every phase. The other family mentioned had ten years' experience in California. This information was very helpful because it balanced the various qualities of climate from the standpoint of the patient himself.

Even government statistics are very deceptive. In the first place, the published reports are usually means, or averages, a mean temperature of 75° for two days might include one day of 50° and one of 100°. Secondly, the government daily record for say 8 p. m. in Washington, is more nearly 5:30 p. m. (local time) in Phoenix. The sun being two and a half hours higher, it is, of course, much warmer. Thirdly, the government thermometer and recording station is usually placed at some considerable distance above the surface, and above the local variations, and it is claimed that it does not go within three to five degrees as high in very hot weather, nor within three to five degrees as low in very cold weather as do the actual surface temperatures.

Now, without trying offhand to decide "when doctors disagree," it seems to me that we can lay down some principles that will coördinate the varying conditions and to a great extent account for the disagreements. To do so clearly, I would like briefly to review those elements of a climate that would make up our ideal, trying moreover to place them in the order corresponding with my opinion of their relative importance.

First, temperature. The government furnishes chiefly mean or average temperatures. Yearly means are of no reliable value at all. Monthly means are not especially useful as above noted. Daily records are hard to get, and they are very bulky and tedious to examine, yet they furnish the only reliable basis. Of these daily records the "maximum" and "minimum" temperatures are the most valuable and reliable of any, though as we shall see later they are not essentially accurate in expressing sensible temperature until combined with the amount of dampness.

Moreover under the general heading of temperature, the "regularity" of the temperature changes is even more important than the actual amount of change in degrees. A daily chart of the variations, like a graphic fever chart, is the only accurate representation of this element. Our ideal then, as to temperature, would be a dry air of about 75° to 80° in the day time, dipping down at night sufficiently to enable one to sleep well, but rising regularly the following day to allow a free out door life.

Second. Second in importance would be the element of dryness. The government reports

\*Read before the Olmstead County Medical Society, March 14, 1899.

upon relative humidity, which is the per cent. of the amount of dampness actually in the air, to the full or saturated amount that it can hold at that particular temperature. It is quite thoroughly established, as before hinted at, that dampness in the air is a kind of wet blanket, making cold air to act more on the bodily temperature and making very hot air more close and unendurable. In this climate, it gives us the chilly, raw character of the first twelve to twenty-four hours of a south wind. On a very hot day, on the other hand, it lessens the evaporative and consequent cooling effect upon the surface of the body.

One who has taken daily morning walks this winter, can easily see that a clear, cold morning, with a slight north wind at 20° below zero, may be more comfortable than after a change to a strong south wind. The air will then grow more cold and chilly as the thermometer shows a rise. It is therefore quite possible to feel the cold less at 20° below zero than at 20° above. The practical point is that this is a real and actual difference, as far as health is concerned, as distinguished from any deception of the senses.

By the very nature of dampness, however, it produces a more equable temperature, one with less daily up and down changes. As a rule, the more dry the air is, the more the temperature will drop when the sun goes down. We have said nothing about the actual rainfall. It is not of so much importance. It may fall in such sudden, infrequent showers, as to show but little in the relative humidity. This latter is our main test.

Third. Third in importance, I would place the "wind." I have hesitated some about placing it in importance ahead of the elevation, but have finally decided so to do. High winds are seldom pleasant. If they are cold, they push cold air against the person, and counteract its heat very rapidly. If hot, they are disagreeable and harsh because after taking away the moisture from the body, the surplus of wind applies a hot poultice of air to the person, producing discomfort and depression. It is not, of course, ideal to have no wind, but in seeking the best, we would have a mild, gentle breeze, just enough to gradually take up the perspiration from the surface, and so produce a mild, cooling and stimulant effect.

Fourth. Elevation. By going higher, one has to breathe faster or deeper to get the same amount of oxygen. If I understand rightly, this is the only important value of elevation. There is not much of value in purity of air (except of course, in contrast to some damp valley, or dusty city),—nor is there usually claimed, I believe, any different action of the oxygen which is inhaled. Nothing is of great value, except the deeper breathing. This is, however, a very valuable influence. We are inclined to believe,

though, that if the deep breathing be artificially brought about on the lower level, it will produce the same effect. In high elevations, the stimulation of the breathing is, of course, constant day and night, as no artificial increase could be. If the patient has no bothersome pleuritic adhesions to be broken up by this increased action of the lungs, nor a circulatory action in any way weakened, the effect of elevation considered by itself alone, must be admitted by testimony, to be usually good. Dennison enumerates ten counter indications, the most prominent of which are later stages of the disease, heart or circulatory weakness, senility and kidney impairments.

Fifth. We would place occupation, entertainment and social advantages of any locality as fifth and last on our list. In the case of a good many people, this fifth advantage would have to come near the head of the list. Women especially would need to have this element more prominent. Indeed, place any one in the most ideal climate in the world, and at the same time deprive him of all occupation, all entertainments, and many of the comforts of life, and it is both doubtful if he stay, and doubtful if it do him much good, if he does stay.

Now this furnishes the principles by which we should judge of climate. All of them, I believe, are practical and established. I wish to present, as far as possible, a candid and unbiassed balancing of the values of the different climates. Otherwise this paper would be of no value. But having personally selected Phoenix as holding an over-balance in this averaging up of advantages, (at least for winter), I think I can most briefly and clearly state my beliefs in the case by describing the climate there, and comparing other leading points with it.

Phoenix is situated in the valley of the Salt River of Southern Arizona, a valley about twelve miles wide, as flat as any Dakota farm, and therefore easily irrigated. The hills, some of them over a thousand feet high, rise abruptly from the valley on either side. The valley trends along for over twenty-five miles, with a quite fertile soil. One hundred and twenty-five miles north, at Prescott, the land is 5,200 feet in height, about the same as at Denver. East and west, still more close to the city, is a rough and mountainous country. South the valley trends down into a wider valley, which curves around toward the gulf of California, about two hundred miles away. The position is therefore sheltered and rather low.

As regards temperature, by the Government report of 1896, the three winter months show a variation between a maximum of 82° and a minimum of 30°, with a daily up and down range of about 30° between the temperature at night and the temperature at the hottest part of the day. This does not count so much, however, as to

say that a graphic chart would show the temperature during the two to four weeks of the coldest portion of the winter to be lowest about three or four o'clock in the night, freezing slightly at times, rising slightly before the sun shines, later rising rapidly with the sun, to be about 10 a. m.  $55^{\circ}$  or  $60^{\circ}$ , then rising slowly till about 3 p. m. to be about  $65^{\circ}$  or  $70^{\circ}$ , then trending rather slowly down until the sun sets, when it drops more rapidly, not, however, getting especially cold until about 9 p. m. The main point in this chart, however, would be that this wave is regular, that each day you can depend upon its going up, and each night upon its going down like the temperature in a regular typhoid fever chart. Exceptions to this are when the days are cloudy or rainy (perhaps six to ten during the winter), on which days the temperature will lack from five to twenty degrees of going so high. I would like to emphasize this. It would be a rash man who would say of a Minnesota city, that on the first day of January, next year, the temperature at three p. m., would be say  $10^{\circ}$  above zero or at any other special point selected. We know it might be  $30^{\circ}$  or  $40^{\circ}$  below zero, it might be  $40^{\circ}$  or even  $50^{\circ}$  above, quite easily. We have probably seen both of these points reached. Moreover, we know that that time of the day the temperature might be going up, or it might be going down, and indeed, might be changing in direction at any time of the day or night. Very little of this irregularity is known at Phoenix. You might say that Jan. 1, would be from  $62^{\circ}$  to  $68^{\circ}$  at 3 p. m., (with the exception noted), with very fair assurance. With much more surety you could describe how it would rise in the morning, be highest in the middle of the day, and then go down at night. This is true the year round. Since October last we have followed every day, and there have been only 8 to 10 days in which a half invalid could not be out between ten a. m. and four to six p. m. It has rained during that period four times. During five days it rained most of the day. Two other days it rained some, one other day was cloudy and very cool,  $47^{\circ}$ , three other days were mildly cool,  $51^{\circ}$  to  $55^{\circ}$ , two days were slightly cool,  $56^{\circ}$  to  $60^{\circ}$ , one day it was  $60^{\circ}$  and somewhat cloudy, one day a dust storm for three or four hours. This is during the rainy and winter season. During the rest of the year little or no rain is expected.

As regards dryness, Phoenix, according to the 1896 reports, shows a mean relative humidity for the winter less than that of any place in the United States, except Yuma, Winnemucca (Nevada), Santa Fé, Pueblo and El Paso. Of these, the last three, with Phoenix and Denver, are not remarkably far separated in this respect. But Phoenix, by reason of less elevation, and her sheltered valley, has this dryness, together with a winter so mild that orange groves are found

there. Moreover, the same 1896 reports show Phoenix to have had a less number of cloudy days than any except four places, and as having the largest number of clear days, except four other places. In the number of hours of sunshine in the year Phoenix seems to lead all except Yuma, which is the extreme, as regards sunshine and dryness.

As regards wind, Phoenix leads quite easily. It has, by the same Government records, an annual average wind below all except four places in the United States. Of these four, only one, Los Angeles, is noted as a health resort. Denver falls considerably behind in this respect. But better than this low average, is to be noted the regularity of the wind. It has something of the regularity of the temperature. During the night there is as a rule no wind. During the day a mild breeze of from two to five miles an hour, as a general rule. Occasionally, (I have no exact record of how often), there are what are called sand storms, simply comparatively high winds, blowing the dust off the desert. These are common to all of the dry region resorts, but are much less powerful and frequent in this sheltered valley than in most of the other places.

As to elevation, Phoenix is 1,000. If other things could be retained, I would prefer it to be 2,500, or more, but this seems not to be possible, and retain all the other qualities. Tucson comes more nearly to doing it. The mildness of the day temperature allows the invalid to be out and exercise in winter, and this must balance the effects of the higher yet more cold climates.

As to occupation and attractions, the country is, as a whole, a desert, and unfortunately, our ideal qualities lead us inevitably toward the desert regions. Phoenix itself, however, is in a kind of oasis, an irrigated area twelve miles wide, and for the most part checkered over with farms, and fairly attractive. Farming has been uniformly profitable there so far. The other businesses in a lively city of 12,000 are about the same as in a city of the same size here. There is a great deal of novelty about the mixed civilization and southern ways. The level country is ideal for bicycling. Horseback riding is common and buggy riding is, of course, the most available. There are very few of troublesome insects and it is as practically free from poisonous reptiles as any resort.

The drawbacks to the place are, first, the dust, which, however, is not so bad as it first appears. It is much less than in irrigated towns. The dust is chiefly in the roads and in our drives. With the mild breeze, I found that we could drive ahead of it, and of course it made no trouble if at the side or in one's face. It is very little noticed after a while and does not seem in any case to affect the lungs.

Second. The daily range from day to night is common to all the dry climates, and is sometimes said to be a drawback. On the whole, however, it is a good thing, for it insures a cool night after a warm day, and those who have watched a patient lose more through one of our muggy, hot nights in Minnesota than could be gained in many days, will realize what a great benefit and comfort the change is.

But in telling of Phoenix we have no desire to uphold it unduly. Beginning in Kansas and Nebraska, the country trending westward is all more or less dry, and in Colorado, Northern Arizona and New Mexico, is all of high altitude, usually from 5,000 to 7,000 or 8,000 feet. Taking Denver, as being both well known, and as a type of the rest, it is sufficiently dry to compete with most other places, but loses in winter, the most important season, by reason of the coldness, having usually considerable "below zero" weather. The temperature is also more irregular and catching. It also has double the amount of wind of Phoenix, has much higher winds, and for six months has more or less snow. Phoenix has practically no snow, no fogs, no dews, and has a mild temperature, rather rarely going below sixty in any clear day in winter. Denver has its best climate in the summer months from May to October. Phoenix has its best climate in the winter months from September to the following June.

I would add here that Phoenix is very hot during the three summer months, but claims to be more healthy than in winter, and is certainly more dry. Many families have gone there permanently. We have not personally experienced a summer there, but are inclined to believe its claims. If so, this could furnish the final overbalancing attraction—that of a place where one could settle permanently, take up some occupation and live economically.

Denver being the typical high altitude resort, others can be dismissed briefly. The New Mexico places, Albuquerque, elevation about 5,000, population 12,000, Las Vegas Hot Springs, elevation 6,707 feet, chiefly a big sanitarium among surrounding mountains, with a town claiming 8,000 population six miles away, Santa Fé, a quiet Mexican town with about 7,500 people, these all approximate the Denver climate, and all are in the dry, desert-like country, with little green or trees about. Silver City claims to have peculiar advantages, is farther south, has an altitude of about 6,000 feet, and claims to be so shut in by mountains as to avoid high winds and to have a temperature fairly mild in spite of the elevation. I have no testimony from there.

The northern parts of Arizona have few towns of especial size, and these all have similar elevations, and are all rather dust blown and unattractive. Going south to the central part, Prescott and Jerome have mountain scenery and an eleva-

tion and climate closely matching Denver. In southern Arizona, we have Phoenix, and a couple of small towns of similar character, closely adjacent, and Tucson, about 100 miles southeast from Phoenix. Of these, Tucson has the advantage in an elevation of about 2,500 feet and in being slightly dryer because not surrounded by an irrigated country. It loses much, however, in attractiveness in comforts, and is also more dusty, windy and cool. The desert here is apt to come right up to one's doorstep. In Texas we have a climate more nearly matching southern Arizona. El Paso, with a fair elevation, nearly 4,000 feet, and a population of 13,000, is very dry. It has not much green about it, but has adjacent towns and affords occupations. It did not seem to me very attractive. It is said to have much more harsh winds and abrupt temperature changes. It is somewhat cooler, by reason of its elevation.

San Antonio has been similarly described to me as losing by reason of abrupt changes, high winds and sand storms.

I cannot stop without specially mentioning southern California, that "land of sunshine and flowers." We came very near going there, but adverse evidence so accumulated that we did not feel safe in so doing, though it is much more attractive, has a more even temperature, and is somewhat cheaper. One observer admitted about forty fogs in the winter months near Riverside, though claiming that some were very mild and that all of them disappeared by 10 a. m. As Phoenix, however, has no fogs nor dews, there is found at once an immense difference. It does not rain much in southern California, but the air is moist and the very increased evenness of temperature is secured by this moist air from the currents of warm water which warm the coast clear up to Washington. The Government records show the air to hold moisture comparing as about 70 per cent at Los Angeles, with about 44 per cent at Phoenix. This is the main overbalancing difference. Southern California has very differing elevations and conditions. The climate of some localities is very excellent as compared with Minnesota, but we believe Southern Arizona is much better than southern California. This is according to the testimony of some people who have lived there many years. There are both high fogs and low fogs, and to avoid them patients have to choose an elevation frequently hard to get. The two places most highly recommended to us were the town of Nordhoff, in a little valley surrounded by hills about fifteen miles from the coast, and the town of Redlands. Santa Barbara, right on the coast, is an exceedingly pleasant place and has a mild temperature for nearly all of the year. San Diego has the most equable temperature, and possibly some cases will gain more by this quality than they would lose by reason of the dampness.

On the whole, however, I think the climate of southern California is not the best.

Disregarding for lack of time any detailed comparison with the Adirondacks, Asheville, Chattanooga and Lookout Mountain—also the climates of Mexico, Nassau, Southern Africa, Algiers, Italy and the Nile, we can yet say that the climate of this section of southern Arizona contains very largely the advantageous qualities to be obtained anywhere else.

Finally, I believe in a very powerful effect to be obtained from climate, if used. It is a simple creed, just air and the breathing of it. The oxidizing of air is the most powerful antiseptic that can reach the air cells, and it, of course, promotes general oxidization of the tissues, and secondarily the upbuilding of them. But it is only such an agent when it is used, and the climatic conditions are such as to allow the free use of it. The air of Minnesota is all right, but the conditions do not favor the free use of it, and that frequently makes all the difference between living and dying. After trying arsenic, iron, cod liver oil and various drugs, without seeing any effect discernible to the naked eye, it is refreshing in one good favorable day of out-door driving or mild exercise, with favorable temperature, wind, sun and dryness, to see very clearly at night the effect on the drying up of the expectoration, the lessening of fever, increased appetite and bodily comfort. One can see the effect of each good day. It is not necessary to wait upon the vacillating improvement of months.

But how does this harmonize conflicting views? I think you can discern the answer. I would freely admit that people have been cured in the Adirondacks, in the pine woods, at home or anywhere. The central element of power is to be found everywhere—that is “air”—and the one who camps out in the Adirondacks and secures free, stimulating, exhilarating exercise there, is sure to be working against the lung infection. But he does so in spite of the less sun, the more rainy days, the more dampness and the greater amount of inconvenient temperature, as compared with other places. The cases, such as go away from home for climate would supposedly seek the best.

In conclusion, a few words of incidental character. There are a multitude of minor details all worth while considering. Instruction to the patient should be quite definite, as to exercise, manner of living, portion of the city to select, as to how long to stay, etc. A resident, advising physician is, of course, the best. Then, too, one who is convinced of the value of a dry climate, ought to start early. Economy, comfort and indeed, one's chances of life all impel him to start early. Yet it is probably true that over one-half of those who go, go only approximately as a last resort.

This is not logical. If the climate is good for anything as a last resort, it is far better as an early resort.

### THE USE OF HOT AIR IN THE TREATMENT OF DISEASES OF JOINTS.\*

BY ARTHUR J. GILLETTE, M. D.,

St. Paul.

When the subject of this paper was chosen the author was under the impression that this therapeutic measure was largely confined to diseases of joints, but upon looking more carefully into the subject, in perusing the files of our medical journals, various essays, clinical reports and discussions, I found the following diseases cited as having been cured or relieved by the hot air method: chronic articular rheumatism, gonorrhœal rheumatism, gout, traumatic arthritis, synovitis, teno-synovitis, fibrous ankylosis, tuberculous joints, flat foot, bronchitis, asthma, tonsillitis, conjunctivitis, angina pectoris, pneumonia, mental depression, eczema, sciatica, lumbago, torticollis, sprains, bruises, synovial affections, disturbances of the chest and pelvis, chlorosis and obesity. Certainly such an array of diseases, cured by such simple methods ought to interest the general practitioner as well as all specialists.

I have found only two theories given to account for the great number of cases cured or relieved by this method: one is that the exudate, both around and possibly in the sheath of the nerves themselves, is responsible for pain, and when this exudate is all or in part removed the pain is correspondingly diminished; the second theory is that the high temperature has an anæsthetic effect on the nerve filaments themselves. As to these two theories, if our pathology of these diseases is true how can this treatment relieve all of them?

Neither of these two hypotheses can explain the relief and cure claimed in the various diseases. It can be explained in two ways: the early writers on this subject, in their anxiety to rush into print and report these cases, were led to draw conclusions as to the results of cures and reliefs before they were well founded; the psychological effect too of placing a member in this oven with a thermometer registering a temperature of 212° and even 400° F., then removing the member from the hot air apparatus, the limb reeking with perspiration, produces a marked mental impression; this I think accounts for a great many “rapid cures.”

It is very remarkable that the men who have used the superheated air for two years and over (in joint diseases especially) and seem to have

\*Read before the Inter-County Medical Society of Wisconsin, March 21, 1899.

kept a careful record of their cases now have very little use for it and advise it only for a limited number of conditions.

In the early writers referred to, the results were obtained after such a very short period, both as to each sitting and the number of sittings, that this too has a tendency to weaken our faith in their reports, for the later surgeons report that even in their most promising cases they subjected their patients to this heat from one to three hours and in many cases as many as fifty applications were necessary before any marked change appeared.

You so frequently see these various hot air appliances pictured in our journals that it is not necessary to take time to explain them or their mode of application. The one thing desired in them all seems to be satisfactorily obtained, namely dry heat from 250° to 375° and even 400° F.—producing a profuse sweating.

The apparatus which I have used is a copper cylinder of sufficient diameter to permit the leg to be introduced so that it will extend—if I wish to apply it to the knee—about eight inches above the knee joint and about the same distance below the joint.

A rubber apron is attached to each outer rim of the cylinder with draw strings to tighten about the limb above and below so as to prevent interchange of air, thus retaining the limb in contact with the superheated air.

Two small holes are made on either side of the cylinder, which are plugged. These are for the purpose of regulating the heat. If the patient complains of too extreme heat the temperature can be moderated at once by removing the corks. Underneath this complete apparatus is placed a gas burner.

This apparatus will serve to treat the knee, wrist and elbow joints. I found this appliance very inconvenient in treating the foot and ankle, and as the patient is obliged to sit for one hour and sometimes three in order to get any benefit whatever, I had a similar cylinder made with both ends closed and having a trap door through which to thrust the foot. Then through the medium of a foot rest the foot is protected from direct contact with the cylinder: thus the patient is enabled to sit comfortably in a chair during the treatment.

It is well also to envelop the limb in woolen in order to absorb the moisture, as the perspiration is sometimes so great as to heat the limb to such a degree as to cause scalding, or the drops of perspiration striking the heated cylinder may steam up and burn the patient.

I do not now use a thermometer as you are much more liable to burn your patient; you are not so likely to be guided by the patient's complaints of heat, some skins being more sensitive than others.

You can not leave your patient alone; a constant attendant is necessary.

My first cases treated were of rheumatoid arthritis and chronic gout, having been led to believe from cases reported that hot air was most effective in them.

The results of the treatment have been disappointing. I have not been able to relieve the pain to any appreciable extent—except for a short time following the application of heat, nor have I been able to modify in any way the other evidences of inflammation. In a large number of cases the existing conditions seem to be made worse by the heat.

Fortunately I have not had the experience of some of having other joints involved which, previous to the heat application to the diseased joints, were free from disease. But the relief in the cases treated has not been sufficient to make one enthusiastic.

Hydrarthrosis is reported as being one of the conditions benefited by the heat after a time, in that the effusion disappears, whether from the local sweating or by the increased power of absorption one cannot say. However, the tension upon the joints being removed, the pathological process which caused the effusion is placed in a more favorable condition for resolution.

When one considers the term hydrarthrosis in its true meaning it becomes only a symptom, not a disease, for the condition is caused by any irritation to the synovial membrane, and one writer who reports cures of hydrarthrosis by heat also states that tuberculous joints receive little or no benefit, and yet tuberculous synovitis is one of the most frequent causes of hydrarthrosis.

I have not used it in fibrous ankylosis, but in an article by Prof. Wilson, of Philadelphia, he has found them most susceptible of benefit. He says: "Joints that have become more or less firmly ankylosed (of course meaning fibrous) as a result of acute inflammatory and traumatic synovitis, or from disuse following an injury, appear to soften under the high degrees of heat, very much in the same way as old glue will soften when heated. This softening of bands of adhesion is often most marked, as evidenced by repeated experience in breaking up ankylosed joints. While the parts were at the accustomed temperature the joints would often appear to be ossified. An hour with the temperature starting at 300° and rapidly running up to 380° to 400°, with occasional ventilation to get rid of the excess of moisture from perspiration, was almost always followed by such a change as to enable manual efforts alone to move the joints 10 to 15 degrees, and by powerful mechanical appliances from 20 to 45 degrees, and it must be noted with comparatively little pain either at the time or following. It has not been an unusual occurrence to have patients walk several squares immediate-



ly after a stiff knee has had free motion imparted to it from 20 to 45 degrees. Within an hour after heat and manipulation some of the former stiffness would recur after the first two or three applications, but gradually, with the full coöperation of the patient and the reëstablishment of muscular coördination, the freedom of the joint increased. Fifty applications, made upon alternate days, has been the greatest number in recovering ankylosed joints, and this was in the case of an ankylosed knee of two years standing. It is not to be expected that a normal joint can always be reproduced, but it is a decided gain over an absolutely stiff joint to have even five degrees of motion."

It is easy to see from this sanguine report that mechanical interference plays an important part in this treatment, to say nothing of what we may infer from the "full coöperation of the patient."

The only effect in tuberculous joints has been to get a little freer motion of the joint immediately following the heat; this is due to the relaxation of the muscles and ligaments, in the early stage of the disease detrimental, as it thus allows the diseased surfaces to be irritated by motion and has in turn necessitated the immobilizing appliance worn to be more snugly applied to prevent the tendency to increased pain after the heat application. Other than this no effect whatever has been observed.

My impression is that it is of no benefit whatever in tuberculous diseases, but I refrain from making a positive statement until it is more fully demonstrated.

In gonorrhœal joints when a suppuration is not present, the heat is certainly beneficial in relaxing the rigid muscles and possibly either absorbing or loosening the inflammatory adhesions.

After patients have worn a plaster cast for a long time it seems of special benefit in restoring the joint to its normal movements. In cases of dry synovitis, which is usually due to impaired circulation or disuse, after two or three hours of continuous heat during a period of a couple of weeks and applied every day has produced perfect cures. In acute or chronic sprains of the knee, ankle, wrist and elbow, excellent results have been obtained, even after considerable time has elapsed. Acute sprains, when seen shortly after the injury, appear among the most favorable cases.

Fractures near the joints respond to this treatment especially where the muscles and tendons are bound down by inflammatory adhesions.

This is well illustrated in the following cases: A physician's wife having had a Colles' fracture, and the bones thoroughly uniting, had little or no motion—no voluntary motion—of the wrist, hand or fingers and there was much pain and

swelling. After applying the heat from one and one-half to two hours, it was possible to get a little voluntary motion, and passive motion was not attended with so much pain. Good motion, in fact a normal joint, was obtained after two months' use of hot air, together with massage and passive motion.

Another was a case of Pott's fracture in which an excellent result was obtained so far as the fracture was concerned, but unfortunately the foot had been left in the position of equinus. With the heat passive motion was also necessary in order to overcome the deformity.

Heat has been found of great benefit in the treatment of inflammatory flat foot, with pronation from the spasmodic action of the peroneus muscles. After at least an hour of extreme heat the foot was relieved of its stiffened condition and by manipulation the arch could be partially restored and the relaxation of the muscles permitted easy rectification of the valgus. But the treatment was of no permanent benefit whatever unless supplemented by the usual flatfoot appliances.

In short, observation, study and experience lead me to believe that hot air at best is only an adjuvant.

It is still impossible to cure the formerly so-called incurable diseases of joints. It must be remembered that in reported cures of cases, such as sprains and other injuries, that these affections in most instances are of themselves cured by use and time, and other conditions of the joints are not materially improved unless this heat is accompanied by massage, passive motion or mechanics.

#### ADVICE FOR YOUNG PRACTITIONERS.

BY W. STUART LEECH, M. D.,  
Brooten, Minn.

On entering the sick room it will prove an unpardonable breach of good manners to either place your hat or medicine case on the patient's bed; neither is it well to throw your hat or overcoat on the floor. After making the necessary salutations, if your hands are cold, (which is frequently the case in this climate), place them in hot water before touching the patient. With a little polite, gentle and sympathetic attention you can gain the confidence of your patient. Avoid all undue familiarity; and the already obtained confidence can be retained by a continuation of good manners, by a strict attention to business, and by a show of diligence by anticipating all the wants and needs of the sick person. Do not get yourself into disfavor by narrating your experience with gruesome cases or by making comparisons. Almost any comparison is odious, but if you see it becoming at any time and deem it absolutely proper to speak of some of your past

cases, you will find it to your interest not to mention any names or cite any case that had a fatal termination. Never introduce your patients while in your office.

If you are just commencing the practice of medicine, equip yourself, as well as your finances will permit, with good instruments and the latest medical books. You can do without instruments easier than you can do without a library. Don't give people an opportunity to say, "Here comes Doctor Gamboge and Jalap Cure," or Doctor Aloes and Asafœtida. Learn the uses of all the new remedies. Remember the actions of paraldehyde, apomorphine, amyl nitrite, the coal tar products, etc. I will here mention something not found in your text-books, and that is that elixir paraldehyde is the drug, par excellence, in grief, insomnia, or distress where there is a death in the family. It lowers reflex activity, soothing the tortured nerves and is comparatively free from unpleasant after effects when judiciously administered.

If you are already in practice and are not a subscriber to three or four medical journals, I would, with all sincerity, advise you to get out of the profession as soon as possible. You can not, with justice to yourself and the public, get along with less than five or ten journals. I know of some physicians who subscribe to every medical journal published in the country.

If you have a uterine sound or curette in your case discard it until you have been in practice long enough to appreciate its dangers and usefulness. It is better to have too many hæmostatic forceps than not enough, and if your finances are not too much reduced buy a pair of obstetrical slippers; some parturients never like to be without them.

If you have gotten hold of a difficult case, do not hesitate to call in an older physician as a consultant. Rather than detract it will add to your judgment and growing reputation. Honor and reverence the older heads; they are the only ones who know the rough road you are traveling, and can give you more sympathy and material assistance than any one else.

Give as little medicine in as palatable and simple a manner as possible. Never give a medicine unless you know what you are giving it for and what results it will produce. Recognize no dose, but give the medicine for its effect; while doing this, bear in mind the drugs that have an accumulative tendency. Write your own prescriptions, and do not copy from some pocket medical formula or from the advertising sheet of some manufacturing chemist. Never mention but to condemn, in toto, all "patent" medicines as worse than useless. Look with great suspicion upon all specially prepared formulas. In brief, get down to business and practise medicine.

Class all individuals under three heads or diatheses, viz: the strumous, the tubercular and the rheumatic. The strumous includes the syphilitic, scrofulous, and generally all those of a light complexion; the tubercular can be recognized by the high, tapering, roof-pointed head, prominent cheek bones, freckled complexion, long neck, sandy or red tinted hair. There are others of this diathesis whose portrait is raven black hair, brown eyes, large bones, and the non-elastic step. Being able to recognize these two diatheses, class all others under the rheumatic.

In combating any disease remember the particular predisposition of the patient and prescribe your drugs accordingly. You should logically make your diagnosis and always guard against the predisposition of the patient. Do not be a symptomatic doctor, for he who treats symptoms alone has already hoisted the white flag of defeat.

Remember that a temperature above 105° will generally cause a convulsion in an infant, and that three or more of these convulsions may produce an epileptic; also that a mother who is fit to give birth should nurse her offspring. Remember that from sixty to eighty per cent. of the children who die under five years of age are bottle fed. Remember that mothers, stupid nurses, and careless women frequently make opium habitués of their nurslings by dosing them with soothing syrups, teething cordials, paregoric and other soothing liquids.

If you do not make use of antiseptics, especially in labor, you are indirectly a murderer. Make as few examinations as possible during the progress of labor, and each time wash or dip the hand in an antiseptic solution. No branch of the general practitioner's practice requires more self-poise, sympathy and skill than that of obstetrics, and when disease or death follows a normal case of labor its cause can be traced to none other than to ignorance or gross mismanagement.

### SOME THINGS THAT EVERY DOCTOR KNOWS—THAT ARE NOT SO.\*

BY H. G. MACKAYE, M. D.,  
Newport, R. I.

Under a somewhat equivocal and specious title, the elasticity of which I shall avail myself of to the fullest extent, I am about to attempt to present for your consideration a number of topics, in a semi-irrelevant way, which I trust may at least have the merit of awaking your interest: in short, you are invited to partake of a literary salad, in which it is hoped that there will not be so much of the garlic of garrulity as to offend the most sensitive taste.

Those of us who acquired our medical education fifteen or twenty years ago may remem-

\*Abstract of a paper read before the Rhode Island Medical Society.

ber the old fashioned urinometer which was marked "sugar" where the scale indicated 1030 and diabetes insipidus where the scale marked 1010. Such instruments of inaccuracy have long since passed away, but the rule of thumb which they exemplified still haunts our professional life.

Most of us are still too prone to look upon a urine that is free from albumen and sugar as relatively innocuous, and to consider the specific gravity as a pretty safe guide as regards the presence or absence of the latter ingredient.

Some years ago I had the honor to present to this society a paper upon some of the clinical aspects of urinary analysis. In that communication I ventured to call attention to the unreliable character of urine drawn by catheter. My experience since leads me to emphasize the remarks I then made. There are at least two sources of possible error in the examination of samples thus obtained:

First, it is not impossible that some mucus should be pushed into the bladder ahead of the catheter. Of course, this should not be so, and thanks to the relegation to the rear of that false and pernicious modesty which used to insist upon passing the female catheter by touch alone, this source of mystification is less often present. But in the male, when there is any urethritis, particularly if it is largely posterior, the possibility of such a condition should always be remembered.

Second, in many patients, particularly if they know for sometime beforehand that "an instrument is to be used," there is set up a nervous excitement that results in filling their bladder with a secretion of the kind which is usually passed at the end of an attack of hysteria, that is, which is chiefly water and little else.

So far as the presence of sugar in the urine is concerned, its determination is not by any means always a matter of complete simplicity. I recall an instance where for months a urine had been rich in sugar, as evinced not only by my own analysis but also by other competent observers. One fine day the urine, which had been having an habitual specific gravity running from 1025 to 1040 suddenly exhibited a marked change in color and specific gravity of 1010 to 1005. It, however, much to my surprise continued to apparently show about two per cent. of sugar, the same amount as had existed before the drop in the specific gravity. Not satisfied with the results of my own examination I had samples submitted to some of my professional brethren with the result that their reports were in harmony with mine. I finally determined to submit a portion of the urine to all the tests commonly used, and, as I had suspected, it failed to react to two, one of which was the fermentation test. The substance which it contained was not sugar; so much was evident, and it became a question

whether it had ever really had any sugar in it at all. Unfortunately, before further specimens could be obtained the patient went abroad and I have never been able to get a satisfactory answer to the riddle which he furnished.

I mention this instance with no idea of discrediting the sugar tests commonly used; they are mostly adequate in the majority of cases, but I merely wish to lay a little stress upon the idea, that even in medical chemistry, which is about as accurate as any department of practice, we are dealing with probabilities and not with certainties.

Any contrivance which is capable of giving you any genuine information about your patient's condition will also tell you a whole pack of lies, if it is misused or abused.

The ureometer of Doremus and the saccharometer of Einhorn are all right when made use of by skilled hands, but they are very poor guides unless their mechanism is completely mastered. We still refer to the clinical thermometer as the fever thermometer, although we well know that a rise of the temperature may exist independent of any febrile condition, but it is not my intention to even attempt a categorical mention of the most prominent fallacies with which we are all familiar. Had I the wisdom of Solomon and you the patience, which has become proverbial in the descendants of Job, time would still be lacking for such an enumeration. I will, however, cite one more incident in which the apparent cause was not the real one. About a year ago I had occasion to perform an emergency operation under chloroform at night. The illumination was furnished by a kerosene lamp, and we had hardly got the patient well under the influence of the anæsthetic before both my assistant and myself were seized with violent coughing and sneezing. We naturally attributed our dilemma to the presence of a considerable volume of the anæsthetic vapor confined in a rather small room, and sought and obtained relief by opening the windows and door. It was only some months afterwards that, happening upon a most interesting paper in the Nineteenth Century, by William Ramsay, I learned the true cause of our discomfort. The conditions elucidated by Mr. Ramsay are doubtless familiar to some of my hearers. In brief, he calls attention to the fact that when chloroform vapor is exposed to light hydrochloric acid and carbonyl chloride are produced which decompose by the moisture of the mouth into hydrochloric and carbonic acids. Of course the first of these can't be breathed at all in large quantity, and the latter even in very small amount is exceedingly irritating. Hence my unpleasant experience was due only indirectly to the chloroform administered, and directly to the chlorine set free in the atmosphere of the room. Mr. Ramsay, in the article already quoted

still further calls attention to the fact that, in the case of ether, peroxide of ethyl, a substance most irritating to the respiratory mucous membrane, may exist after undue exposure to air and light. He also gives two simple and effective tests for the determination of these common impurities in our two most widely used anæsthetics.

One reason, perhaps, why we don't receive more helpful replies to our clinical interrogatories is that we lack breadth, both in questioning and in the interpretation of the answer. Can it be too often reiterated that the presence of albumen, even with casts, in a urine, does not by itself give a diagnosis of "Bright's disease," that glycosuria does not mean diabetes, that heart murmurs do not always whisper "heart disease," that there is not any one "bug" in the whole outfit of our skilled friends, the bacteriologists, whose simple presence of necessity should entail the isolation of contagion or the sentence of death, unless backed up by confirmatory clinical phenomena?

From the examples thus far instanced, I think that you will agree with me that the "things that every doctor knows—that are not so," are altogether too numerous; the question, therefore, naturally arises, how are these errors, which already exist in the minds of most of us, to be weeded out, and also how are we in the future to steer clear of others like unto them?

The beginning of every civilization of necessity begets, in its pioneers, a more or less universal adaptability; the new settler must be carpenter, blacksmith, lawyer, doctor, and, at a pinch, parson. He gets along, somelhow, at first; then in the second generation those whose ancestors have shown a leaning towards any given calling not infrequently follow in the footsteps of their fathers or uncles. This is partly a matter of inheritance, and partly because it is easier and more profitable to keep the same business in "the family." It is easy to see, then, that the knowledge, which is the primary stock in trade of those who follow such callings, is acquired from a very limited experience, and brings with it an undue confidence as well as a manner of boastful self importance.

From the ashes of the campfires of the early settler, behold phoenix-like "the Jack of all trades" arises flapping his wings. Now, all the native practitioners of the early period of our history had some of the aforesaid "Jack's" blood in their veins, and as they leavened the whole loaf of our medical practice of even to-day, it is not surprising to find traces of the same ancestral strain still existent. Perhaps it may in some distant measure be due to the fact that the aboriginal "Yankee" was a great whittler that the American surgeon stands preëminent.

But although we may be willing "to point with pride" to the fact that the universally ac-

knowledged sand and sense, which characterizes our profession in this country, is a gift from our forebears, we must still admit that our disinclination to introspection and to orderly thinking may possibly come from the same source.

To escape error from without we must first purge ourselves from the likelihood of error from within; we must first know ourselves, clearly and distinctly, in order that we may know others likewise. How then is this to be accomplished?

Many years ago, a man no longer young, who had been educated as a priest, served as a soldier and found the apples of Sodom in the gaities of Parisian life, sat by a quiet fireside in a little hut in Holland. Wearied by the unrealities of an eventful career he turned to the solace of silence and sought within himself that which he had been unable to find in the world about him, the foundation stone of reality upon which to build a structure of permanence. As the weary hours passed by, there gradually became illumined upon the hitherto blank tablets of his mentality the axiom "cogito, ergo sum"—"I think, therefore I am."

Upon this fundamental dictum, which René Descartes announced as the corner stone of his system of philosophy, rests now as then all hope of a judicious comprehension of self.

Orderly thought is then the first essential of true intelligence whose North and South poles are analysis and synthesis, for, in spite of what we hear of "a creative genius," the very term is an anachronism, for the universe has already been created; we can but study and reflect on facts as we find them, resting well assured that the discovery of today is but a recollection of the past.

The practitioner of today finds himself hedged about by many adverse conditions; a ruthless commercial competition seeks to drag him from the old-time pedestal of decency and decorum into the dirt of deception and charlatany. A ready pretext for such a descent lies in the obvious fact that he must have money in order not only to do justice to himself, but also to do justice to his patient; he can get along without instruments, books, chemicals, and last but not least, a certain opportunity for leisure, for a man in our profession who is over driven becomes per force "a routinist," much to his own discredit and his client's loss.

The solution of this difficulty has been sought far and wide. In the interest of humanity in general, as well as in our own behalf (the two being clearly inseparable), the courses in the better class of medical schools have been lengthened, not only that the graduate might be better equipped, but also that he might be less numerous.

Again, certain states have passed more or less stringent "practice laws," whose chief aim is, to

be sure, the protection of the public, but perhaps, and merely incidentally our own protection.

Others have attempted to answer the proposition, at least in part, by acquiring the "dispensing habit," and have discovered in the tablet triturate and compressed pill a sort of meteoric fragment of the philosopher's stone.

The methods which I have just cited are perhaps well enough in their way and help a little to lighten some of the every day burdens which oppress the profession at large, but they do not strike at the root of things and are consequently not radical in the relief they afford.

To my mind there is but one road that the doctor can take if he desires to work out his professional salvation, and that is he must seek to cultivate his individuality to the farthest degree possible. To succeed he must be different from his competitors and, at least in many directions, more capable.

It is perfectly evident that a rigid self-inspection is the first step towards the working out of such an individualization, which would commend it to our consideration, even if it had no other reason for meriting our approval.

Having seen how requisite introspection is to the elimination of sources of error from within ourselves, let us see what may be done to diminish the false inferences, which we are likely to draw from the observation of phenomena in others; in short, having come to some sort of an understanding of our own personality, let us find a way of getting in touch with the true inwardness of our patient's various characteristics.

Of course all of you know of the so-called ganglionic nervous system, sometimes and perhaps more familiarly denominated the "sympathetic nervous system," because it was believed to form a common bond between remote structures of the human body and to correlate their functions.

You are also doubtless aware of the widespread distribution and ramification of the branches of this system, as well as its susceptibility to all the more common forms of stimulation, making certain parts of our economy as sensitive to distressing certain other parts, as a village congregation is to the sorrows of its pastor.

Now nearly a quarter of a century ago the distinguished German neurologist, Heidenhain, in a series of experiments on the effects of nerve stimulation on the parotid gland of the dog, found that in the first place the amount of saliva secreted and the per cent. of salt in it kept pace with the power of the nerves going to the gland, to the latter's limit. That the per cent. of organic matter depended on the gland's former capacity for secreting it, and on the strength of the nervous excitement, but that when the excitement decreased the secretion of organic matter decreased much more slowly than that of the in-

organic; therefore a strong excitement left an effect which inclined the gland to separate organic substance. Hence the separation of water and salt (the inorganic material) on the one hand, and the organic matter on the other, depended on different conditions.

He found that the pressure in the gland was 106 to 118 m. m. of mercury before the secretion began; that this was also true of the submaxillary gland; hence the blood pressure must be equal in each.

The saliva started by an excitement of the sympathetic was richer in organic material than that caused by exciting the cerebral nerve going to the gland. Moreover a microscopic examination of the cells of the gland, showed that during the excitement of the cerebral nerve they remained unchanged in shape and size. On the other hand, when the sympathetic was excited, they changed very evidently in both shape and size. Hence Heidenhain arrived at the conclusion that there are two kinds of nerve fibres going to the gland; the secretory, which govern the secretion of the inorganic matter; the trophic, which control the formation of the organic matter. Moreover, that the cerebral nerve has few trophic fibres and the sympathetic, many. The neurologist also believed that these conditions were analogical with those in the human subject.

But I hear some one ask, what has this experiment of long ago to do with the subject in hand?

Before answering this question I must briefly call your attention to an allied topic.

What we call the emotions have been defined as "the movements of the mind." It is well known that emotional states, acting through the sympathetic system, though no motor power can be exerted through that channel (save in rare instances), bring about a large variety of physical phenomena, the most common of which are the quickening of the heart's action or its paralysis, the increased secretion of urine and sweat, as well as in many other ways, which will readily occur to you. I wish to lay special stress that these effects are brought about independently of the human will, and sometimes in spite of it.

Now sympathy, which is "the quality of being affected by another's affection," and showing that we are so affected, is one of the most efficient ways of arousing emotion, for emotional states are notably contagious. Its efficacy in the daily practice of medicine is knowledge, which is the common property of all practitioners; we all know, in a general way, that it is useful to at least appear sympathetic in the sick room.

But if you will now recall Heidenhain's experiment, you will see why I recited it.

If sympathy readily arouses emotions, if these emotions may stimulate the sympathetic nervous system, and the parts to which it is distributed,

and finally, if stimulation of that system may beget new organic material, the importance of our attitude towards our patients is immensely increased, and the horizon of therapeutics much enlarged.

I am not a partisan of the "mind curist," or "mental healer," feeling assured that he is chiefly important because of what he does not know, and up to the present time being in total ignorance of what his supposed mental attainments really are; but neither have I much confidence in those doctors whose only point of contact with their patients seems to be the tip of the pencil, with which they write their prescription, on the point of the knife, that they use in an operation.

Of course, between an overmastering manifestation of sympathy, and an overpowering attitude of aloofness, there is a golden mean. I see no occasion for slobbering over a patient or of pawing him. The family doctor, like the "family" horse, must be safe for women and children, and has got to give assurance that he won't run away, at least with the women. But for any one of us, who desires to eliminate, as far as possible, sources of erroneous inference, from without, the balance should be on the side of sympathy.

There is yet another aspect to this question.

Dr. Leonard Corning, in a recent article in *The Medical Record*, on "Changeful Personality," notes the fact "that memories are linked in a consecutive chain by the emotions." Hence, when we feel the emotion of sympathy in the sick-room, it may help us to recall those means, which in our experience have proved effective under similar conditions, and thus another, though indirect, benefit will accrue to patient and practitioner.

How comparatively easy to write of these things; how relatively difficult to utilize them in our daily work. But in a profession which has as much, if not more, than any other, its quota of gentlewomen and gentlemen enrolled in its ranks, I do not believe the task impossible.

The Treatment of Chronic Ulcer of the Leg.  
—John B. Corsiglia, M. D., in the *New York Medical Journal*:

Let us take a chronic ulcer situated below the middle of the leg. I first scrub the leg and ulcer with soap and water, and dry thoroughly. No matter what kind of an ulcer it is, my next aim is to reduce it to a simple ulcer. This is done by curetting; and, as this is quite a painful procedure, I inject two or three drops of a four per cent. solution of cocaine in the vicinity of the ulcer. The best mode of using cocaine hypodermically is to put the needle in superficially and horizontally as far as it will go. After two or three minutes, during which anæsthesia appears, I inject two or three drops more with

deep punctures. If much bleeding results on curetting, I dip a sponge in a two per cent. solution of carbolic acid and compress for five or ten minutes. If at the end of this time bleeding continues, I leave on a wet dressing of said solution for twenty-four hours. My next aim is to get the ulcer dry and to dress it dry. I have obtained the quickest results by brushing the ulcer with pure carbolic acid and then touching this with a little cotton dipped in alcohol. Alcohol has the power of absorbing carbolic acid, and so lessens the action of this drug. If at the end of two days I still find any oozing, I again brush with pure carbolic acid. In regard to the bandage, I begin at the toes and extend up as far as the knee. And let me say just here that a properly applied bandage is of the utmost importance in these cases. When the ulcer is perfectly dry, I apply small pieces of adhesive plaster heated over an alcohol lamp, one piece overlapping the other, and allowing a small space between for any discharge which might take place. After a few days, if no exudation is seen on the dressing, and there is no displacement, I leave it on for a week or two. Of course, each case is a law in itself. But, no matter how old the ulcer may be, I have as yet to see the one which would not yield to this treatment. In varicose ulcers, where the ulcer is surrounded by a thick ring of tissue, I make radiating incisions. By so doing, you start the circulation toward the dead part and so give the ulcer a chance to heal. In these cases also, and where extensive œdema is present, the bandage should be pretty tight; if cellulitis complicates these cases, I order an elastic bandage. Practitioners will find the utmost difficulty in obtaining any history in many cases. But I have laid down this rule: An ulcer situated above the middle of the leg is syphilitic, regardless of history.

Evidence that colds are infectious is furnished by what we observe among our domestic animals. Cats seem to be specially susceptible. Probably they often bring home from the nocturnal rambles those mysterious catarrhal attacks which so rapidly run through the house. It is an old saying, "The cat is sneezing, we shall all have colds." Sheep, too, are liable; a whole flock may suffer, and many show that curious eruption around the lips (*herpes labialis*) which we all know only too well as one of the most unpleasant accompaniments of a bad cold in the head. On the Australian sheep runs, when the shearing comes around, the men who congregate at the sheds are frequently smitten with an illness of a catarrhal nature, which rapidly takes hold of them, and often affects some 90 per cent. Sometimes it becomes very serious, and may even develop into fatal pneumonia. To all appearance it is caught from the sheep.—Spectator.

**NORTHWESTERN LANCET.**

A SEMI-MONTHLY MEDICAL JOURNAL.

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220 Broadway, New York City.**MAY 1, 1899.****HYDROTHERAPEUTICS.**

It is a good deal the same with the use of water and of electricity as remedial agents. Because they have been vaunted as cure-alls and their use has proved to be very disappointing they have fallen under the ban of the medical profession as a whole, and the advocacy of their use is wont to fall upon deaf ears. The use of cold baths in typhoid and other fevers and perhaps the Schott method of stimulating baths in the treatment of some forms of heart disease do not come into this category; no one looks askance at them although for various reasons these forms of treatment are comparatively little used.

The term hydrotherapy suggests rather the wet pack, the douche, the drip sheet. These are but little used outside of the regular hydropathic establishments, and yet there is abundant testimony from high and unimpeachable authority that there is much that is good in these remedial agents. In a paper read before the Boston Society for Medical Improvement and published in the Boston Medical and Surgical Journal, Dr. J. J. Putman, Professor of Nervous Diseases in the Harvard Medical school speaks with regret of the prevailing indifference to the use of water as a therapeutic agent and discusses that use from the standpoint of the scientist and particularly of the neurologist.

Taking into consideration the fact that many of the most important vital processes are reflex phenomena, such for instance as the circulation of the blood and the activity of the important

glandular organs like the liver and kidneys; and the further fact that the skin contains the sensitive terminations of innumerable nerves, it is no surprise that a powerful stimulus applied to the skin should profoundly affect the circulation and other important reflex processes. There are two evident ways in which the circulation is affected by the application of cold to the skin: first, by the change in the blood pressure of internal organs caused by the contraction of the vessels in the skin; second, by setting up reflex contractions and dilatations in the vessels of the internal organs. In addition to these obvious effects there is a probable direct stimulation of the trophic nerves, but the whole subject of trophic nerves is one so little understood that it is impossible to speak upon it with any certainty.

There is abundant evidence, both clinical and experimental, of the influence of water applications to the skin upon the heart's action, the respiration, the digestion, the secretion of urine, the activity of the nervous system and upon tissue metamorphosis in general. One of the most striking results of properly applied hydrotherapeutics is the improvement of nutrition either of a part or of the whole of the body as the need may be. Some years ago Dr. Mary Putnam Jacobi, of New York, wrote a pamphlet upon the treatment of anæmia by the cold pack followed by massage, and this little pamphlet has become quite a classic in its way although the knowledge of it is less widespread than its merits deserve. In using this form of treatment Dr. Putman advises the selection of the noon hour just before the midday meal in cases of anæmia, neurasthenia or debility, as the patient's power of reaction will be highest then. The patient's skin should be thoroughly warm when the pack is applied, the pack itself consisting of a coarse linen sheet wrung out of water at a temperature between sixty and seventy degrees, and followed by the immediate application of blankets previously arranged so that the patient may be rolled completely up in them in such a manner as to exclude the air. As this cold pack soon becomes a warm one and the patient is thrown into a perspiration it should be followed by a cold douche.

One of the great bugbears of cold water treatment, not only in the mind of the patient, but often in that of the phy-

sician, is the supposed danger of "taking cold". As a matter of experience, however, this rarely happens and it need never happen when the treatment is properly employed. The successful application of cold water to the skin is followed by a reaction in which the patient feels in a glow. Failure of this reaction is not in itself harmful but is often the accompaniment of internal disturbances of circulation which may so lower the power of resistance of certain organs as to expose the mucous membranes to bacterial invasion constituting the phenomenon popularly called "taking cold."

It is therefore a mistake to suppose that a cold bath is more likely to be followed by taking cold than a warm one. Indeed quite the reverse is true for after the hot bath there is a feeling of warmth in the skin that is deceptive and is likely to be followed by undue chilling of the body, particularly if the hot bath be taken just before bed and the subject go to sleep while the skin is warm, and therefore probably with insufficient bed coverings. The safest bath is one of short duration and sufficiently cold to ensure a prompt reaction. For the vigorous the plunge bath best accomplishes this purpose, while the debilitated should have the cold water applied to but part of the body at a time and followed at once by vigorous friction. Children, it should be remembered, bear cold poorly and react to water at higher temperature than adults. Baths producing much reaction must also be applied with caution to elderly people and to patients with heart disease.

### BOOK NOTICES.

A Text-Book on Practical Obstetrics. By Egbert H. Grandin, M. D., Gynæcologist to the Columbus Hospital; and George W. Jarman, M. D., Gynæcologist to the Cancer Hospital, Instructor in Gynæcology in the Medical Department of Columbia University; etc. Second Edition, Revised and Enlarged. Illustrated. Phila., New York, Chicago: The F. A. Davis Company. 1898. [Price, \$4.00, net.]

The second edition of this work has received additions chiefly in the subject of obstetric surgery as that is the only branch of midwifery in which any material advances have been made since the appearance of the first edition, five years ago. During this time symphysiotomy has risen relatively in importance, having now a well established place in the art where but a few years ago it was almost entirely neglected.

Grandin and Jarman have added to medical literature a book which it is easy to praise. They give plain and common sense advice about a subject which of all medical topics needs common sense treatment. A book on practical obstetrics should be practical, and this one is eminently so. It tells what to do in a given case, instead of rehearsing a multitude of things that may be done, leaving the reader bewildered and incapable of a choice, like the traditional donkey that starved between two hay stacks. As an example take the matter of post partum hemorrhage. In some books will be found half a page of measures that may be employed, with no indication of which should be chosen first and which reserved for a last resort. Grandin and Jarman say first examine the cervix to see that the hemorrhage is not from a ruptured vessel there; then administer ergot hypodermically and massage the uterus; then use a hot intra-uterine douche; then insert ice; finally pack the uterus with gauze, a measure which if properly carried out must put an end to the bleeding.

Another illustration of practical, common sense advice is in regard to the use of the forceps in protracted labor. The authors refuse to set a time limit. They say it is "a question of conditions not of minutes or hours." As soon as it is evident that the woman cannot deliver herself it is time to interfere at once.

Nervous and Mental Diseases. By Archibald Church, M. D., Professor of Clinical Neurology and of Mental and Nervous Diseases and Medical Jurisprudence in the Northwestern University Medical School, Chicago; etc., and Frederick Peterson, M. D., Clinical Professor of Mental Diseases in the Woman's Medical College, New York; etc. Illustrated. Philadelphia: W. B. Saunders. 1899. [Price, \$5.00, cloth, net.]

This is not a single work, by two authors, but really two separate books bound together in one cover. The first part deals with nervous diseases and is written by Dr. Church; the second part, mental diseases, is by Dr. Peterson. As is to be expected nervous diseases occupy much more than half the space in the volume.

The important subject of cerebral localization is treated in an admirable manner with diagrams and practical rules that will be of great assistance in the study of an individual case. With the assistance of a guide of this kind the general practitioner need not call upon the specialist to help him in the diagnosis of a tumor or other disturbing lesion of the brain.

One of the best chapters in the book is that upon hysteria, which is for the practising physician the form of nervous disease most commonly met with. The description of the disease is framed in such a manner as to be particularly



useful in the matter of diagnosis, which is to the general practitioner at least the point of chief importance in relation to the disease. The attitude of the physician and of friends to the patient after the diagnosis of hysteria has been declared is such that a mistake as to the nature of the case would often be a great calamity.

Dr. Peterson's contribution upon insanity, takes up first classification, general etiology and symptomatology, the examination and treatment of patients and then the consideration of the various forms of mental disease. These he makes both clear and interesting, free from the dry and complicated details with which many works on mental diseases abound. Indeed the general practitioner is rather inclined to neglect insanity among his medical studies, largely because most writers make the subject difficult and obscure, in marked contrast to what will be found in Dr. Peterson's description.

**Progressive Medicine.** A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; etc. Volume I. March, 1899. Phila., Lea Brothers & Co. 1899. [Price, per set of four volumes, \$10.00.]

The general plan of this work is to give to each writer for a subject some branch or subdivision of a branch of medicine or surgery, and let the writer give an account of the year's progress in that department. It goes without saying that a work of this kind, edited by Dr. Hare and published by Lea Brothers will be made up of contributions only from the best writers in the country. As illustrative of this the first volume contains a section on the Surgery of the Head, Neck and Chest, by Dr. J. Chalmers DaCosta, the Diseases of Children, by Dr. Alexander D. Blackader, Pathology by Dr. Ludwig Hektoen, Infectious Diseases, by Dr. William Sidney Thayer, Laryngology and Rhinology, by Dr. A. Logan Turner, of Edinburgh, and Otology by Dr. Robert L. Randolph.

The essay written upon each subject is not limited to an account of recent progress, but is in itself a short but complete description, so that the work is really a brief manual of medicine with special emphasis upon recent additions to the knowledge of each subject.

**The Principles of Bacteriology.** By A. C. Abbott, M. D., Professor of Hygiene, and Director of the Laboratory of Hygiene, University of Pennsylvania. Fifth edition, enlarged and thoroughly revised. Illustrated. Philadelphia and New York: Lea Bros. & Co., 1899. [Price, \$2.75].

The steady growth in the size of this book has not been more marked than its growth in

popular favor, and it is a favor that is well bestowed, for a better book to guide the student or practitioner in the practical study of bacteriology is not likely to be written.

In the first place the author knows what he is writing about; he has a daily personal experience with the methods whose use he advises. Next, he knows how to write a book to make it interesting and at the same time accomplish its object of teaching. Starting at the beginning of things, he gives a full description of all appliances and the necessary technique, from how to prepare blood serum and the other culture media to a description of each organism as it appears under the microscope, the last including some excellent plates, colored, to show the appearance of the germs after staining.

**Annual and Analytical Cyclopædia of Practical Medicine.** By Charles E. de M. Sajous, M. D., and One Hundred Associate Editors. Volume III. Illustrated. Philadelphia, New York, Chicago: The F. A. Davis Company, 1899.

The third volume of the "Annual" covers the ground from "Dislocation" to "Infantile Myxœdema," the first by Lewis A. Stimson and Edward L. Keyes, of New York; the last by Osler and Norton, of Baltimore. Besides these, among other important articles may be mentioned that upon "Dysentery," by Simon Flexner; "Eclampsia," by Grandin; "Eczema," by Stelwagon; "Empyema," by the two McFadden Gastons, of Atlanta; "Endometritis," by Byford; "Epilepsy," by Pritchard; "Ether," by Sajous; "Exophthalmic Goitre," by J. J. Putnam; "Fractures," by Stimson and Keyes; "Gout," by Levison, of Copenhagen; "Hernia," by Coley; "Hip Joint Disease," by R. H. Sayer; "Hypnotism," by Eskeridge, of Denver, and "Hysteria," by the same author. Each article is a complete essay upon the subject, beginning with definition and ending with treatment, with the addition of special information upon recent literature.

**The International Medical Annual and Practitioner's Index.** By Many Contributors. New York: E. B. Treat & Co., 1899. [Price, \$3.00].

The seventeenth volume of the "Annual" exceeds in size those that have gone before, showing among other things that the past year has been fruitful in new medical literature. The contributors are chosen among the leading workers and writers in the medical profession of the United States and Great Britain, with one or two from such far away parts as British Guiana and Queensland.

The work is divided into two principal parts: new remedies and new treatment. Both parts are arranged alphabetically and handsomely illustrated.

## MISCELLANY.

## ADVANCES IN OUR KNOWLEDGE OF TYPHOID FEVER.\*

Since the sad experience of our troops at home and abroad last year with typhoid fever, medical interest in the disease has been, if possible, even more keen with regard to everything pertaining to it than before. The springtime nearly always witnesses a recrudescence of the disease in various parts of the country, owing to the fact that the melting snows and the spring freshets carry down with them into the water supplies of towns a certain amount of infective typhoid material that has been accumulating during the winter months. Typhoid is one of those diseases of which the practitioner is apt to think that "there is nothing new under the sun," at least, nothing new that has a practical application, or is of value in the prophylaxis or treatment of the disease. A glance, we think, at Dr. Taylor's articles on "Typhoid Fever" in *Progressive Medicine*, the new quarterly review of medical progress, edited by Professor Hare,\* is apt to disabuse one of such unprogressive notions.

With regard to the prophylaxis of others during the treatment of a case of typhoid, these noteworthy recommendations from a French source are given: (1) Isolate patients suffering from typhoid fever, or at least do not permit them to be treated in a room or ward containing young people who have not previously had typhoid. The warning contains some wholesome advice too often neglected, and sometimes with sad results, because we are persuaded that typhoid is not an air-borne disease, and forget that contiguity favors infection because precautions will inevitably sometimes be neglected. (2) Nurses for typhoid cases should, if possible, be only such as have had typhoid themselves. In a family the young people should be removed. (3) The floor of the sick room should be oiled, so as to be impermeable. Carpets and rugs should be removed, and the raising of dust should be avoided by frequent use of a cloth dampened with antiseptic solution. (4) The nurses should wear linen clothes, which they should remove when they leave the sick room, and in general they should be warned to be circumspect in their relations with others, and especially careful of the utmost details of antiseptic in the matter of the preparation of food and drink for themselves and others.

The review of the question of typhoid infection from oysters is full and conclusive. The possibility of typhoid infection through salads is made clearly apparent, manure being used in

bleaching the plants and gardeners being careless in handling it and washing the plants in any sort of water, or sprinkling them with infected cistern water.

The strikingly practical features of this excellent review of the recent literature of typhoid, are the discussion of the question of typhoid without intestinal lesions, and of its corollary that intestinal lesions, even when existent, often play a very minor rôle in the disease. How important these questions are for the matter of treatment is clear at once. All the so-called abortive methods of treatment, all the much lauded systems for securing intestinal antiseptic, all the many drug formulæ and combinations that have been enthusiastically recommended for the treatment of typhoid, assume that the essence of the disease is the intestinal lesions. This is a notion that must disappear before scientific advance of our knowledge of the true nature of the disease.

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White Skin Grafted on a Negro.—From a clinical lecture by Stuart McGuire, reported in the *Southern Medical Record*:

Before beginning the regular work of today, I wish to exhibit a patient who illustrates the fact that skin grafts do not always acquire the color of the individual on whom they grow, and demonstrates the importance of matching the borrowed skin to the adjacent integument in cases of cosmetic work where the result of the operation is in an exposed position. Some of you will remember this negro, whose leg was amputated in the clinic over a year ago. Owing to an effort to save too much of the limb, sloughing occurred in the flaps, and a raw granulating surface resulted, over six inches in diameter. You will recollect that as soon as active suppuration ceased he was brought before you again, and the defect covered by Thiersch's method of skin-grafting. Usually skin-grafts are cut from the individual's thigh, but in this instance they were taken from the leg of a white man which had been amputated a few moments before. I remember telling you that it seemed a shame to mutilate black skin when so much white skin was going to waste, and expressing my belief, based on the investigations of Karg, that pigmentation would occur and that the white skin would gradually become black. The operation of skin-grafting was a perfect success, and the patient was discharged in two weeks with a well-healed stump. He comes back for exhibition today. The artificially formed skin is firm, pliable and painless, but as white as the day it was implanted. Fortunately, owing to its position, it is a matter of no consequence. Had it been upon the face, and had the colors been reversed, there might be a lively suit for malpractice.

\**Progressive Medicine*, a Quarterly Digest of New Methods Discoveries and Improvements in the Medical and Surgical Science. Edited by H. A. Hare, M. D. No. 1, March, 1899. Lea Brothers & Co., Philadelphia.

## TREATMENT OF INSOMNIA.

A new method of inducing sleep, personally tested by J. B. Learned, is to cause muscular fatigue by exercises carried out in bed. Lying on his back, the patient first reaches for the foot and head board at the same time. He then raises his head half an inch at the same time he breathes slowly and deeply about eight inspirations to the minute, which are counted. After about twenty inspirations, the head, which begins to feel heavy, is dropped. The right foot is then raised (the reaching for the boards and counting being continued) and similarly dropped when fatigued. The left foot goes through the same process. The muscles which are used in reaching for the head and foot boards are then relieved, and the body is elevated so that it rests on the head and heels. He then turns on the right side and reaches for the head boards and foot boards again, and raises first the head and then the foot as before. The same process is gone through on the other side. If sleep has not been induced, the same cycle is gone over again.

The use of hypnotics in insomnia is simply the use of symptom remedies; insomnia is a symptom, not a cause of disease nor a disease. The use of hypnotics, therefore, according to a writer, should be temporary, while the underlying cause of the insomnia is being removed or palliated. Before employing hypnotics, other measures should be tried. One of the best is a bath at 104 degrees Fahrenheit for five minutes. The general cutaneous vascular dilatation, increased by rubbing with a coarse towel, is frequently followed by a good night's rest. Warm liquid food, as a glass of milk or a bowl of soup, will often give satisfactory results. In debilitated persons a glass of stout or whisky in hot water may work wonders. Sometimes stimulation of the emunctories, as by sodium sulphate, given in hot water taken at night, will be followed by sleep, particularly in gouty subjects. Methods which relieve pain—position, topical applications—are hypnotic. Chloralamid, pelltine, paraldehyde and trional are the safest hypnotics.

Robert T. Edes believes that a normal and sufficient general nutrition is to be looked for as the basis for normal cerebral nutrition. A useful criterion is the body-weight in reference to the height and usual or normal condition of the person, and diet is to be regulated upon this basis. Secondly, the distribution of the blood is to be equalized, with the balance, however, tending to anæmia of the brain rather than the reverse, though by no means to an extreme. The derivation of blood may be accomplished by hot baths of the feet or of the lower half, or even the whole body, emphasized, if necessary, by a little mustard. A small amount of easily di-

gestible food just on going to bed or on waking up in the course of the night probably acts in the same way. A hot toddy adds to a slight direct narcotic effect the early vasomotor dilating action of alcohol. It is well to promote the circulation in cold feet by a hot bath for five minutes, followed by a short, cold douche and friction, rather than simply to attempt to warm them by hot bottles.

Of the hypnotics which narcotize the nervous centers, the bromides—the potassium salt preferred—given in two or three doses during the latter part of the day, and in many chronic cases through the day, are valuable. If there is much nervous excitability and restlessness during the day, a bromization lasting a few days or a week or two is occasionally admissible. Sulphonal used with care is little likely to do harm, except that which attaches to any habit of this kind or dependence upon artificial aids to sleep. Fifteen grains are sufficient, and its use should not be prolonged beyond an emergency period of four or five days without an interval of more than two days.

Christiani has given lactophenin for insomnia in over 200 cases of insanity with very good results. The dose given varied from 1 to 3 grains, being administered in some sweet emulsion. Sleep that had all the characters of a natural slumber followed in a very short time, lasted from four to nine hours, and was not succeeded by any bad effects.—The Monthly Cyclopædia of Practical Medicine.

While the curette is the ideal instrument for attacking excessive menstrual flow, there remains a number of cases that will not permit operation, and others in which the trouble is entirely one of functional derangement. In such cases, especially where the exciting cause is an irritation arising in the Fallopian tubes or in the ovaries, ten to fifteen drop doses of tincture *cannabis indica*, given every three or four hours, is often curative. It should be commenced a few hours after the flow sets in, say twelve to eighteen hours after, and continued until its effect is produced or the symptoms abate. Much will depend upon the character and purity of the product used as to the amount of benefit received.—Kansas Med. Index.

Lehmann, in *Semaine Medicale*, states that if the patient keeps his eyes completely or partially open during the chloroform narcosis, and opens them whenever you try to close them, you can expect some accident more or less severe. This phenomenon was noted twenty-one times in 329 anæsthesias, and in each one there was either continuous vomiting, arrested respiration, peculiarly protracted agitation, or asphyxia and syncope, requiring artificial respiration.

## THE MAY MAGAZINES.

The Atlantic opens with an article upon the Australian Extensions of Democracy, which gives a minute description of the affairs of England's five great Pacific colonies. John S. Wise continues his account of his war adventures during the last days of the Confederacy, with an account of his last experiences with General Lee and President Davis. In "The Orator of the Confederacy," William L. Yancey is described as the most earnest, active and impassioned advocate of the Southern Confederacy. Prince Kropotkin has another installment of his fine series in this issue, and Mrs. Julia Ward Howe also continues her Reminiscences.

The Review of Reviews devotes considerable space to a survey of recent developments in American cities. The editor comments on the re-election of Mayor Carter Harrison in Chicago, on Mayor Jones' remarkable triumph in Toledo, on the Detroit project for municipal ownership of the street railways, and on the general situation in Boston, San Francisco, Minneapolis, Cleveland, Denver, St. Louis, Philadelphia, Pittsburgh and New York. Dr. Shaw also contributes a special study of the new San Francisco charter—a remarkable document in its way, and Mr. George F. Hooker gives some interesting facts about Mayor Quincy's administration of Boston. Mr. Julius Moritzen contributes a dispassionate and well-informed statement of the influences tending to bring about a disruption between Norway and Sweden.

With the May Ladies' Home Journal "The Countess Emilia," Anthony Hope's new romance, is begun and "The Art of Listening to a Sermon" inaugurates the first of a series of articles on the pulpit and the pew by Ian Maclaren. Another notable feature of the same issue is "The Secrets of a Happy Life," by the Rev. Newell Dwight Hillis, D. D., pastor of Plymouth Church, Brooklyn, who has become a regular contributor to the Journal. Paul Leicester Ford writes "The Anecdotal Side of George Washington," recounting some of the best but least-known stories of the "Father of His Country." Viola Allen draws upon her own rich store of experience to tell "What it Means to be an Actress," and Joseph Edgar Chamberlin introduces "Helen Keller as She Really Is," giving some interesting glimpses of this marvelous blind and deaf girl.

Lippincotte opens with a complete novel by Christian Reid, entitled Princess Ladine. It is a good, stimulating love-story, and well worth reading. "The Question of the Philippines Reviewed" and "Democracy and Suffrage" are the two best articles of this number, although the entire table of contents is attractive to the general reader.

## NOTES.

**Sanmetto Always Reliable in Strength.**

I have one word of praise to say for Sanmetto viz: that the last bottle gives the same results as the previous one, or in other words, Sanmetto is always reliable in strength. Marck C. Myers, M. D., Kansas City, Mo.

**Glyco-Thymoline.**

In acute and chronic rhinitis and post-nasal catarrh Glyco-Thymoline (Kress) will be found specially efficacious, diluted in from one to three parts of water, and slightly warmed before using. As a gargle in diphtheritic inflammations and other forms of pharyngitis, its bland and non-irritant properties render it most soothing and curative to the inflamed membrane.—Chicago Medical Recorder for March, 1898.

**Use Proves its Value.**

"I have given your Neurosine (Dios) a thorough trial in a severe case of neurosis with 'Tachycardia' and it has given entire satisfaction. In a case of epilepsy which I had in my outdoor clinic, the results, so far, are excellent." C. H. Holzhausen, M. D., 352 W. 21st st., New York City.

"I am meeting with every success to be asked for in the administration of Neurosine (Dios) in Epilepsy." R. E. Calhoun, M. D., Chesterville, Ills.

**Pruritis Ani.**

A. J. Baker Flint, M. D., 102 Huntington Ave., Back Bay, Boston, writes of a case.

"I want to, in the interest of humanity, ask you to lay special stress upon the value of Unguentine in pruritis ani. I personally have been tortured with it for seven or eight years and never have found anything to act only as a palliative until I used your preparation, which has absolutely cured me and now my faith in it is such that I prescribe it for everything in which there is inflammation or where it is necessary."

**Vin Mariani in Exhaustion.**

We have had occasion in numerous instances to administer "Vin Mariana" to business and professional men who complained of being gradually run down. The work of the office, the cares and worry entailed by business and the physical flaccidity brought on by overwork, all seemed to give way completely in a marvelously short space of time, despite the fact that the subjects continued uninterruptedly at their usual occupations. The notable fact to be observed is that in each instance the effect was permanent. But it must not be forgotten that, in order to make this result a lasting one, it is necessary to keep the patient upon a prolonged

course in the use of "Vin Mariana." There is no doubt whatever that this preparation has proven itself a boon to mankind.—The St. Louis Medical and Surgical Journal, March, 1890.

#### Substitution Run Mad.

The extensive use by the medical preparation of iron and manganese preparations tempts unscrupulous manufacturers to resort to unusual risks to get his inferior preparation into the hands of the profession.

"Gude's Pepto-Mangan" has received such unusual commendation from the most careful investigators in both Europe and America, that one manufacturer has gone so far as to quote in his own circular the clinical reports of men who in their investigations only Gude's Pepto-Mangan, but this manufacturer leaves out any reference to the Gude preparation. Can it be possible that any physician will use such a preparation when this deception is once pointed out to him? The Lancet regrets that it is not permitted to give the name of this manufacturer, and thus to hold him up for the contempt he deserves.

#### When Pain is Dominant.

"A number of years ago, in a conversation with my old friend, Professor Stucky, of Louisville, he told me that he used far less morphine now than formerly and that he was able to combat the factor of pain as successfully in the majority of cases without it as he did with it. He urged me to give antikamnia to my patients who had neuralgia, lagrippe, rheumatism, locomotor ataxia and dysmenorrhœa, instead of using morphine. I acted on his suggestion and have been able to relieve this class of patients as effectively and without producing the evils that result from the exhibition of opium or its alkaloids. Antikamnia possesses anodyne, antipyretic and analgesic virtues and has been thoroughly tried by able therapeutists. Prof. Shoemaker, of Philadelphia, has found it very valuable in rheumatism, migraine or neuralgic headache and many other nervous affections."

#### Quick Cure of Catarrhal Fever.

One evening I was called to attend a gentleman, a member of my own family, who had just returned from a trip during which he had contracted a well-developed case of catarrhal fever as the result of a severe cold. His pulse was 120 degrees; temperature 102.2-10 degrees; skin, hot and dry; pain all over the body and a splitting headache; all the mucous tissues were inflamed, involving the nasal tract, throat and bronchial tubes; the eyes were watery, the nose was running, throat sore—in fact his whole system was thoroughly congested.

It was very important that he should be able to travel within a day or two. I ordered him to

take a hot foot bath, then drink a hot lemonade and go to bed. I left him six Tongaline & Quinine Tablets with instructions to take one every half hour, washing it down with plenty of hot water.

I saw him about seven o'clock the next morning and received the following report: about one hour after going to bed he commenced perspiring and began to experience a feeling of drowsiness, so that before he had taken all of the Tongaline and Quinine Tablets he fell into a refreshing sleep, from which he did not awake until five o'clock. I found his pulse was normal, temperature 99 degrees, skin moist, the pain entirely gone and all the unfavorable symptoms decidedly improved; in fact the trouble was thoroughly under control. I prescribed a mild cathartic, and by the following day he was able to go on his way rejoicing.

Since then I have frequently given Tongaline and Quinine Tablets in similar conditions with marked success in each instance. Frank A. Barber, M. D., Chicago, Ills.

#### The Original Germ of Hæmotherapy.

The prodigious growth of medical and surgical use of Supplied Bovine Blood, in almost all diseases, within the last three years, has left the primal demonstration of its power and availability long out of general remembrance. The crude experiment of Dr. May, in 1888, although vastly developed from and improved upon, since, was all the more radically illuminating from the crucial crudity of its method, and deserves to be ever commemorated as the classical case par excellence. We therefor reproduce the original report in all its unconsciousness of the consequences infolded, as a matter of history, which will live in medical annals.

"On September 10th, 1887, was consulted by a Mrs. Watson, age 58 years, birthplace Wales. Description—short, stout, sandy hair, blue eyes. Occupation—for several years laundress. Duration of ulcer two year previous to the time she called me. History—about two years before discovered a sore on the outside of left leg, about central portion, which continued to grow worse, and she was compelled to quit her labor about six months previously. Had been under treatment of several physicians from the start of the case; also taken various proprietary medicines, principally alternatives and ointments locally; result unsuccessful, and the ulcer gradually increased in size and depth, and the pains become unbearable. At the time I saw her, the leg from knee down was swollen immensely (calf 21 inches, ankle 18 inches), the foot also much swollen, but very slight swelling of toes; skin red, glazed, shining; ulcer about four inches in width and six or seven in length, indurated, cup-shaped with irregular edges extending down in-

to the muscular tissues, red and purple discoloration surrounding. Serous discharge considerable and some pus. I gave vegetable alteratives, iodides, iron, etc., internally; locally, linseed poultices, citrine ointment, peroxide of hydrogen solution, etc., and enjoined rest, but without effect. In January, 1888, concluded to try stimulation by nutrition locally applied; selected bovine; administered in proportion of one part of bovine to three of boiled water, and when cooled to a temperature of 110 degs. injected it in amounts of one dram of the solution at six different places around the ulcer, and about one inch from its edge. Discontinued all internal remedies except salines to keep the bowels regulated. This course I repeated every other day, slightly increasing the amount and gradually nearing the diseased edges as the healing progressed. Directed it to be washed frequently with hot sterilized water, and covered with absorbent cotton 1-1000 bichlor. In about one week signs of healthy granulations appeared. By March, 1888, the swelling had greatly decreased, likewise pain and heat; diseased skin began to exfoliate, and it gradually healed, leaving slight scars similar to those subsequent to a burn, rather whiter in appearance than the surrounding skin. Discontinued treatment then except vaseline dressing. I saw it in the following May, and it was entirely well, and gave no inconvenience whatsoever to the patient, and has remained so since. W. H. May, M. D., New York City.

#### A Reason and a Belief.

It is the boast of Americans that no people in the world are as well fed as they. It is undeniably true that no nation is so much blessed with such wealth of food material as this. The present generation might be termed a race of indiscriminate eaters, and the problem of the busy practitioner today is not how to nourish the body but how to successfully relieve it of the effete products of waste. To coin an axiom, we might say that the secret of good health is good drainage, not the drainage of land, but that of the body. The human body has been very aptly compared to a machine and the food which the average individual appropriates is the fuel which furnishes the energy to keep the machine in motion and repair. The complicated mechanism of the human body is more frequently disarranged by the incomplete combustion and consumption of the fuel furnished it than any deficiency of nutritive material. The resulting condition is both known and called by the profession and laity, constipation. To the physician it is the unfailing source of many complications. It is the incident and the accident, the cause and the effect of physical degeneracy. We may assert without fear of contradiction that none of the ills which flesh is heir to, is more intractable

than constipation nor is there one which baffles the skill of the average physician more. It is not surprising that the tendency on the part of the people to over feed and take too little exercise has its logical consequence in the prevailing custom of taking all sorts of pills and purgatives. A universal cathartic habit is abroad in the land. An indiscriminate use of cathartics cannot be too strongly deprecated because most of them hold their victim in such bondage by becoming progressively inefficient. They not only deplete the system too rapidly, but the very gripping which the most of them produce is a signal that an affront has been offered to nature. The retaliation is the pain, the resentment, a subsequent failure on the part of the abdominal viscera to perform their functions. An agent which would offer to the busy doctor the means of sweeping from the system all waste with the corresponding security against any of the objections which have been cited, would be a boon that would find a warm welcome and intelligent application in his hands.

Such a remedy we believe exists in "Syrup of Figs." Many careful general practitioners have reported that Syrup of Figs is not open to the same criticism as other cathartics. Its action is potent yet persuasive. It does not devitalize the patient by robbing the blood of its serum or by sweating the delicate mucous membrane of the intestines. It is a laxative pure and simple, and produces firm and full formed stools instead of watery evacuations. Syrup of Figs is as agreeable to the taste as it is satisfactory in its results. It can be employed by the conscientious physician with every assurance that its use is certain and safe and is not followed by any peristaltic paralysis on the part of the patient, as it does not produce the subsequent inertia of the bowels common to other cathartics. It can be prescribed for women, children and people of sedentary habits as a reliable remedy which is maintained at a uniform standard of excellence. One that realizes the expectation of the Doctor without doubt or disappointment.

A correspondent of the Cincinnati Lancet-Clinic, says that blennorrhagic or gonorrhoeal rheumatism is best treated in the acute stage by giving perfect repose to affected joints and using calming liniments; such as belladonna, opium or chloroform, over affected surfaces. Internally salicyate of soda may be administered while treatment of the urethritis is continued. If the arthritis passes on to the chronic state it is necessary to resort to revulsive methods, tincture of iodine, massage, sulphur baths, turpentine stupes or electrization. Removal of patient to warm or hot sulphur springs almost always insures a speedy cure of this variety of rheumatism.

## LECTURES AND ADDRESSES.

## ACUTE SIMPLE SYNOVITIS—ACUTE SUPPURATIVE ARTHRITIS.\*

BY JAMES E. MOORE, M. D.,

Professor of Clinical Surgery in the University of Minnesota,  
Minneapolis.

Gentlemen:—Our first case is one of acute simple synovitis of the knee, such as you will all meet with in practice. This man is about thirty-five years of age, gives a good family history and is a bridge carpenter by trade. One week ago after working all day with the thermometer registering 30° below, his knee became painful and swollen. The pain has not been severe, but has been constant. The swelling has gradually increased so that it is now as you see distended to the limit. You see that the swelling is most marked in the upper pocket of the joint, and when I place my finger upon the patella and press downward, I can feel it come in contact with the bones beneath. In other words we have a floating patella, which is conclusive evidence that the swelling is due to effusion within the joint. The joint is partly flexed and he can scarcely step upon the foot, although the patient is one who is not easily hurt. There is a local rise of temperature and the thermometer under his tongue registers 101° F.

Make note of the fact that although this man has been suffering for over a week only one joint is affected. This will exclude rheumatism. I beg of you to remember that rheumatism is a poliarticular disease, and is never known to attack but one joint. One would think to hear the laity and some of the profession talk that every pain and swelling about a joint is due to rheumatism. If you will remember this one practical point I have given you, you will not join the throng who are everlastingly prescribing rheumatism liniments.

The history and symptoms of this case are those of acute synovitis. If it were rheumatism, other joints would be involved and if it were suppurative the temperature would be much higher and the patient would be very ill. This patient walked to my office yesterday with the aid of a cane and does not feel badly aside from the pain in his knee. The exciting cause in this case was doubtless exposure to extreme cold. What the real condition was that made it possible for exposure to cold to produce an inflammation in this knee is beyond our knowledge. Most writers class this as non-infectious inflammation. There are those who are so carried away with the germ theory that they believe that all inflammation is

due to germ infection, but the burden of proof rests with them, and so far they have been unable to demonstrate the presence of germs in this class of cases.

When you are called to treat a case of this kind you are safe in giving a favorable prognosis. I expect this man to be able to go to work in three or four weeks from now. When the distention is as great as in this case it is safe and wise treatment to remove the excess of fluid. When I say safe I expect that you will follow my example and exercise every aseptic precaution. If you are not prepared, or doubt your ability to do this, don't attempt it, for it is not absolutely necessary. By emptying the joint, pain is relieved and convalescence hastened. My assistant has carefully prepared this knee, while I have been preparing my hands as carefully as if I were about to open an abdomen. I now take a small sterile trocar and plunge it into the joint just above and to the inner side of the patella. Before introducing the trocar I pulled the skin aside so that when it is withdrawn the opening will be immediately closed. You see I have removed quite a quantity of clear fluid containing a few flakes of lymph. It is sometimes quite cloudy or milky in appearance, due to the presence of lymph; but it is sterile.

I now withdraw the trocar, and you see that the joint has a normal appearance. I place a padded, straight wooden splint back of the leg, and apply a bandage snugly from the toes to the body. The patient will be kept in bed for about a week, and the bandage will be frequently reapplied because we depend upon the continuous pressure to promote absorption. After about a week I shall allow him to get about on crutches and shall direct that the bandage be removed at least once a day and the knee thoroughly massaged, after which the bandage will be reapplied. In exceptional cases the pain is severe enough to require an opiate and the local application of heat. It may be necessary at times to prescribe a liniment to gratify the patient or the friends, but the only effect it will have will be upon the patient's mind.

Having shown you a case of simple synovitis I wish now to show the result of an acute suppurative synovitis. As you have heard, the treatment of the simple variety is mild and the prognosis is good. In the purulent variety, however, the treatment must be heroic and the prognosis is grave. How serious a disease it may be is well illustrated by the fact that instead of a patient I bring before you a limb amputated to save the life of a patient suffering from an acute suppurative arthritis of the knee. I use the term arthritis, because all of the structures of the joint were involved which is apt to be the result when

\*A Clinical Lecture delivered at St. Barnabas Hospital, Minneapolis, February, 1899.

the synovitis is suppurative in character. While suppurative synovitis in so large a joint as the knee is always a serious affair, I would not have you infer from this case that amputation is the usual result in these cases.

When a joint inflammation other than rheumatism is accompanied by a temperature of 103° or over, chills and a boggy swelling extending beyond the confines of the joint, it is suppurative in character and demands surgical treatment. The œdema above and below the joint which pits upon pressure is pathognomonic of suppurative arthritis. Rheumatic synovitis may be accompanied by as high a fever, but it is never confined to one joint and never suppurates. When in doubt as to the character of a joint's contents, make an aseptic aspiration, and if pus is found there is only one way to treat it and that is to lay it open freely and drain with rubber tubes. The danger is that you make too few and too small openings.

This specimen was removed by Dr. Benjamin from one of his patients. I saw the patient first about eighteen days before the amputation. At that time he was suffering from an acute suppurative synovitis the result of an osteomyelitis breaking into the joint. He had had previous attacks of osteomyelitis, but it had not broken into the joint before. At this first operation the joint was laid open freely in several places and through and through drainage established. This will usually save the limb, but the joint may become ankylosed. In this case about the eighteenth day after the first operation an uncontrollable hemorrhage occurred, due to a slough in the popliteal artery and the man's life was saved by prompt amputation through the thigh. The saving of his life was a great victory for he was in a desperate condition. This hemorrhage corresponded to the secondary hemorrhage so common after amputation in preantiseptic days and was due to the same cause, viz: sepsis.

After establishing drainage the joint must be fixed by means of a splint. The knee must be extended upon a straight splint and a large moist dressing applied. The dressings must be changed frequently and when the temperature rises the joint should be irrigated with sterile salt solution. Don't use bichloride because it will not stop the suppuration and it may poison your patient. Should the temperature persist in spite of your tubes it may be necessary to lay the joint wide open to reach all the foci. As the discharge diminishes the tubes may be gradually removed one at a time. Promise your patient a stiff joint although it does not always follow. Don't undertake to limber the joint by passive motion before the joint is healed or you may start up the disease anew. After the wounds are all healed and the temperature all gone an effort should always be made to establish motion in the joint, unless, as sometimes happens bony union has taken place.

## ORIGINAL ARTICLES.

### HOW SHALL WE QUARANTINE AGAINST DIPHTHERIA.\*

By H. M. BRACKEN, M. D.,

Professor of Materia Medica and Therapeutics, University of Minnesota; Secretary and Executive Officer of the Minnesota State Board of Health.  
Minneapolis.

Facts that have been brought out by recent investigations make the proper quarantining of diphtheria an exceedingly difficult problem to deal with. If we make it a time limit for those who are known to have the disease, the results are most unsatisfactory. The disappearance of the membrane from the throat of a patient is no evidence of the disappearance of the contagium. A time limit that is governed by the appearance of the diseased part is unreliable. An attempt to choose such a time limit as will absolutely insure the disappearance of the bacillus diphtheriæ is unsatisfactory, because we cannot determine such time absolutely. In one case, but a few days may suffice. In another, even months may elapse before the germs disappear. If an average, say of four weeks, is adopted as a possible safe limit, quarantine will rapidly become a dead letter and even dangerous, except in the more severe cases, for the mild suspicious cases of sore throats will avoid consulting a physician, or the physician having mild suspicious cases of sore throat under his care will be inclined to make a diagnosis to suit his clients. There will thus come about, through a tendency to conceal the existence of diphtheria, a more wide spread danger of infection. Not only this, but there may be a tendency to increase the diphtheria mortality. If cases of sore throats are concealed, the natural result will be to keep the diphtheria cases out of the hands of physicians until the disease has reached such a stage as to thoroughly alarm the family or friends of the infected one. We all know the importance of early treatment in order to secure the best results in dealing with this disease. We do not take the position that it is a self-limited disease like measles, scarlatina, typhoid fever, etc., and that our duty ends with the piloting of the patient past the various danger points, but rather that it is one of the few diseases where the physician can bring about a cure, and where it is his duty to do so with the least possible delay.

If then impractical methods of quarantine lead to the concealment of diphtheria, thus keeping it out of the hands of physicians until infection of the individual becomes general, the chances of arresting the disease are diminished; the dangers are increased and the quarantine system may even justly be charged up with the death of diphtheria victims. Quarantine, while

\* Read before the Minnesota Academy of Medicine, April 6, 1899.



intended for the protection of the well and not for the convenience of the sick, should not be conducted along any such unreasonable lines as to endanger the safety of the infected. Hence we must condemn any form of quarantine that endangers the life of those suffering from a quarantinable disease.

With these facts before us, the time limit in the quarantine of diphtheria must be classed as irrational and dangerous both to those infected and to those who are trying to avoid infection.

Before discussing the regulation of the quarantine of diphtheria by bacteriological findings, it will be well to consider the degree of danger from infection. How do the bacilli of diphtheria leave the person of the infected one? That it is with the secretions from the mouth and throat will generally be conceded, I think. If these secretions are properly cared for, there should then be little danger of the well members of a household carrying the disease to a third party. If the quarantine of the patient is properly conducted, there should be little necessity for tying up the whole family. This fact should be impressed upon all families, and intelligent sanitarians should instruct a household in the methods of caring for the dangerous secretions from a diphtheritic patient. Quarantine regulations should have some elasticity based upon the conditions surrounding each individual case. With intelligent work, looking to the control of dangerous secretions, our methods of quarantine can be modified. Antitoxin hastens the separation and removal of the diphtheritic membrane. The constant use of a mask containing a volatile antiseptic, together with the proper care of secretions, would reduce transportation of the contagium to a minimum.

A patient that was clinically free from diphtheria might be allowed some abatement of quarantine methods. Bacteriological inspection is most important during the entire progress of any given case of diphtheria. A negative diagnosis of diphtheria should never be given when dealing with sore throats, without a bacteriological report upon the case. On the other hand, a patient once quarantined should never be entirely released until a negative bacteriological report justifies such action. It may not be practical to keep every patient under the most rigid quarantine until all the bacilli of diphtheria disappear. It would be unfair to do so unless we were to institute a general inspection and quarantine every one who has in the nose or throat the bacilli of diphtheria. Theoretically, this latter method would be ideal, but it is not practical, although we know that all who carry about with them these specific germs are dangerous. Here, then, comes the line of distinction. Let those who are clinically ill with diphtheria be closely quarantined. Let the homes of those who are

to all appearance well but who show bacteriologically the presence of the bacillus diphtheriæ, be placarded. Under the first system, the regulations would be quite rigid, as at present set forth by our diphtheria quarantine card: "All persons are forbidden to go into or out of these premises, or to carry into or out of them any material whereby Diphtheria may be conveyed, except by permission of the Board of Health, under penalty of not less than five dollars (\$5.00) nor more than twenty-five dollars (\$25.00) for any violation of this act."—Section 19, Chapter 132, Laws of 1883. Under the second, the house would bear a warning placard stating the fact that an individual, or individuals, in a house, were possible sources of infection.

By this latter method, restrictions would be placed upon bacteriologically infected individuals, but not upon the whole household. It might be difficult to carry out this plan to the extreme, but there is a practical way of getting at it, as follows: All school children should be examined at frequent intervals. This should be done through the action of school boards. The cultures taken from the throats and noses of those in school—teachers, students, servants—should be examined bacteriologically. A positive bacteriological report as to the presence of the bacillus diphtheriæ should exclude such an individual from the school buildings or grounds, and this exclusion should continue until the bacteriological report is negative beyond question. Not only should such an individual be excluded from school, but also from all public places, and from travel. The residence of such an one should have the "warning card" posted upon it. All the people and animals in a house found to contain an individual, bacteriologically diphtheritic, should be examined culturally. The warning card should be kept up until all the house were proven culturally to be free from the bacillus diphtheriæ.

"Some recent research establishes (the fact) that the Loeffler bacillus does not penetrate much beyond its entering point and that it does not find its way into the blood and organs, except when it is associated with the staphylococcus or streptococcus. In this case, it is found in the blood and organs in abundance.

"These facts confirm Barbier's theory that the diphtheria bacillus does not find a ready foothold in man, and that it requires a soil prepared by some other infection. The importance, therefore, of keeping away from diphtheritic infection persons already affected by some other infection becomes more and more evident.

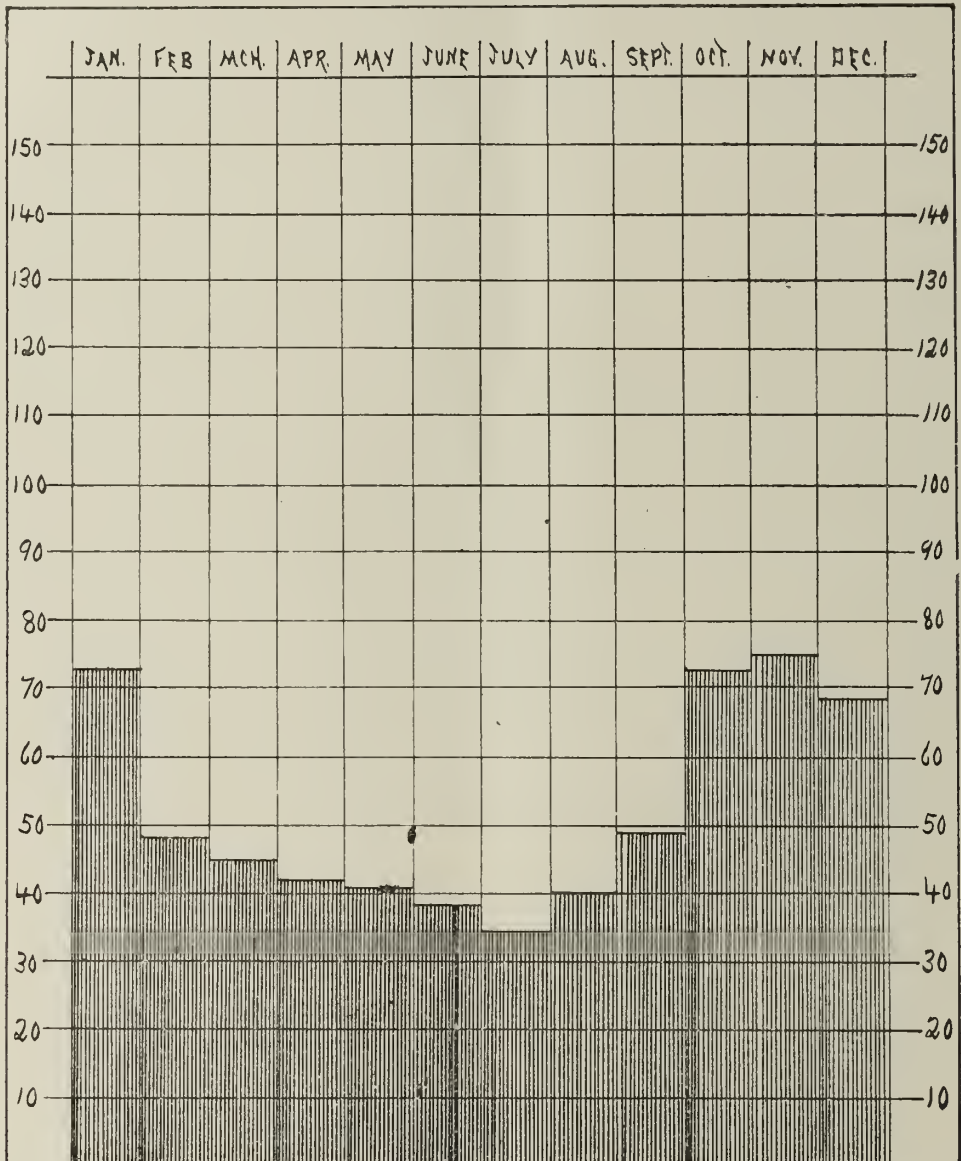
"When the streptococcus is associated with the diphtheria bacillus, the general condition is serious; there are apt to be cardiac accidents; very rapid and irregular pulse; the patient has diphtheria and also septicæmia. The local treat-

ment should be intensive and the serum injected early and often."(1)

The question will naturally arise: Who is to examine the school children? Conscientious inspectors, under the local board of health or under the school board. Preferably the latter, for the move is undoubtedly one of protection and an individual, or organization, will naturally pro-

logical laboratory, municipal or state. The laboratory should report the result to both the school inspector and to the principal of the school. The school inspector or the school principal should then notify the local health officer and also the parents or guardians of the child. The health officer should put the warning placard upon the home of the infected one and give

From the Seventeenth Report Minnesota State Board of Health. DIPHTHERIA. Average Monthly Mortalities for Eleven Years, 1887-1897 inclusive.



tect its own interests better than can any outside party.

A school inspector should come upon a school at frequent unexpected intervals and take cultures, to be submitted to a reliable bacterio-

instructions as to the methods of procedure in order to become free from infection.

School boards and teachers should take a willing part in this work, for it is in every way to their interest to exclude disease from schools. At present, schools are great factors in the dissemination of infectious diseases. Careful school inspection would not only be protective against

(1) From Rev. Gen. de Path. Int., January 5, 1899.  
Quoted from the Journal of the American Medical Association, February 25, 1899, p. 445.

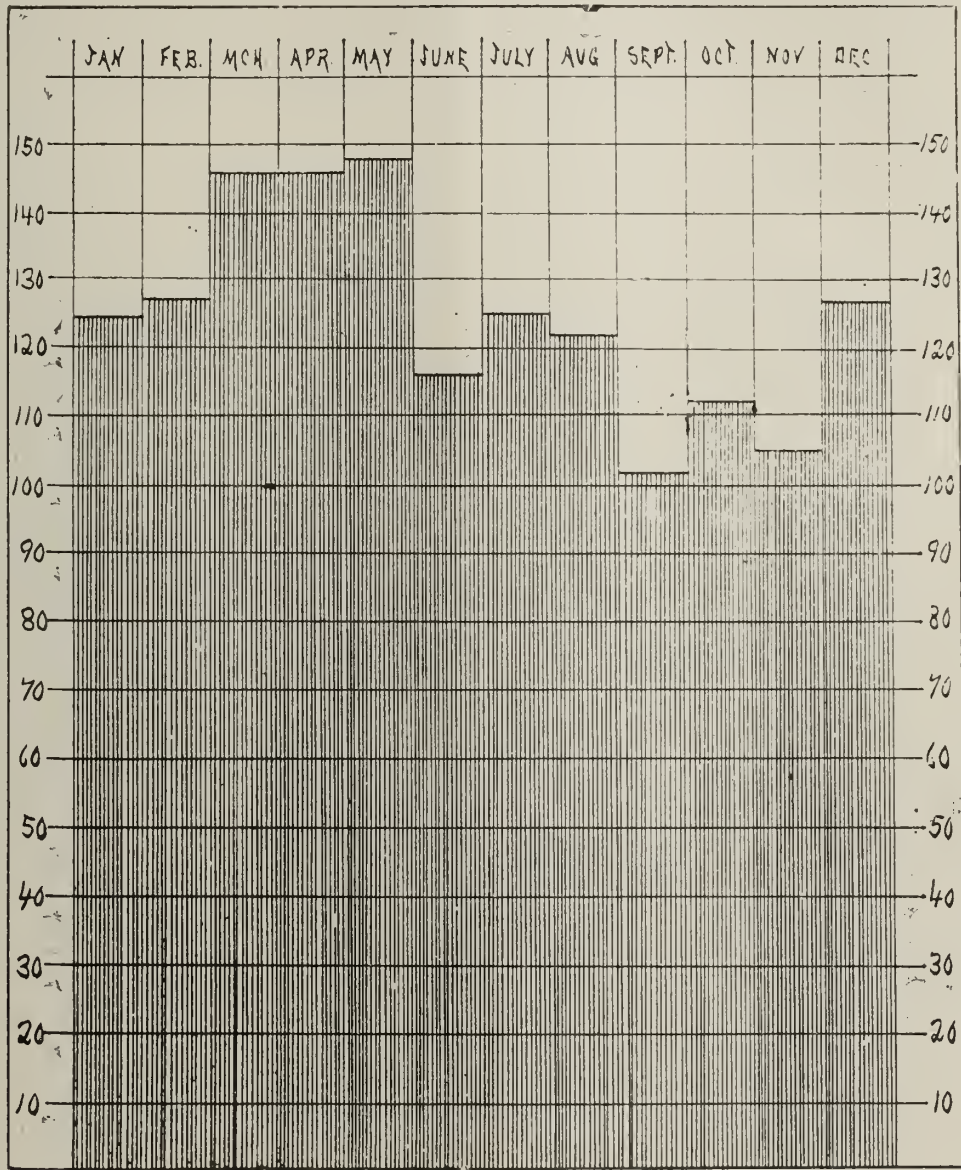
the annoyances that naturally follow the existence of infectious diseases in a school, closing of schools, destruction of books, expense of disinfection, etc., but it would indirectly be of great benefit to an entire community through the tendency to control the general spread of such diseases.

One, the acute disease, is dreaded and quarantined even to the extreme limit;

The other, a chronic disease, receives but little sanitary control.

The acute disease may be said to kill its tens, while the chronic disease kills its thousands of victims.

From the Seventeenth Report Minnesota State Board of Health. TUBERCULAR DISEASES. Av. Monthly Mortalities for Eleven Years, 1887-1897 incl.



It may be well to compare the methods pursued in dealing with diphtheria and tuberculosis involving the air passages:

In both we have a specific germ;

In both, the dangers of conveying the disease to others is through the same media;

The virulence of the germs is about equal;

Both diseases are extremely dangerous;

I would not use this as an argument for more leniency in dealing with diphtheria, but rather to draw your attention to the need of greater sanitary control of tuberculosis.

I would have every tuberculous, as well as every diphtheritic individual excluded from school. Some may say: this is wrong because it will exclude the tuberculous poor from secur-

ing an education. Even this might be an advantage. The ignorant cannot follow indoor occupations as readily as can the educated. Therefore the ignorant tuberculous individual might be forced to lead the kind of life best suited to his condition—an out of door life. It is not necessary, however, that the tuberculous should be brought up in ignorance. The municipality and the state should provide them private teachers, if necessary, rather than have them in the public schools. The exclusion of young tuberculous pupils would certainly be an advantage to the excluded as well as to the protected children, for the excluded tuberculous child would get more out of door life, less objectionable posture and all those elements that are most conducive to recovery from tuberculosis when made use of early in the disease.

Look at the chart showing the average number of deaths from diphtheria in Minnesota during the past eleven years, and then at the chart for tuberculosis during the same time. Note the death rate of these two diseases and then answer me: which needs our attention most?

Let us then hold the good we have in the quarantine regulations for diphtheria. At the same time, let us try not only to make advances in controlling the spread of diphtheria, but in the eradication of that great death-dealer, tuberculosis.

#### A CLINICAL STUDY OF CASES RESEMBLING TYPHOID.\*

By O. C. STRICKLER, M. D.,

New Ulm, Minn.

Mr. President and Gentlemen:

My paper this evening is a plea for exact diagnosis, rather than a consideration of the therapeutics of the conditions considered. Diagnosis and its twin sister, pathology, have very properly been termed the foundation of scientific therapeutics, and although we may very justly admire the superstructure, we must remember that it can only stand on the scientific investigation of pathological processes. Further, a successful physician, while necessarily possessing other qualifications and accomplishments, must primarily be an exact diagnostician.

It is idle to consider the therapeutics of any important case simply from the presentation of its symptomatology without first possessing accurate knowledge of the pathological processes causing the same. However, an exact diagnosis in the class of cases under consideration is not at all simple, particularly in those cases of acute infection where the early symptoms are so frequently masked. And here is where a positive diagnosis is so often demanded, and frequently too, where in spite of the later advances in diag-

nostic science, we are compelled to admit that a positive statement cannot be given. It is particularly important that we differentiate early between a condition possibly demanding surgical interference, and one running a prolonged course.

One of your members, Prof. Greene, at a late meeting of the state society, called attention to the desirability as well as difficulty of rendering a correct diagnosis in typhoid cases, and I was much surprised to hear in the discussion that followed, that typhoid is a disease of a fixed and limited course and easy of diagnosis. This is, however, far from the truth. Here, as in many of the acute infectious diseases, we do not find a simple etiological factor and cannot expect a fixed symptomatology. Indeed, we know today, that not only does mixed infection play an important rôle in the etiology of many infectious diseases, but is very frequently present. Further, microorganisms undergo variations in morphology and peculiarities dependent upon the soil and developmental conditions. The Eberth's bacillus is particularly liable to such varied idiosyncrasies, a fact which explains many of the seeming contradictions of our investigators. Vaughan is of the opinion that this explains the many variations in the course of typhoid, believing that each bacteriological modification may possibly possess a corresponding modification in the course of the disease. So frequently has this peculiarity of the bacillus typhosus been observed by him, in the many cases examined post mortem, that he states that rarely has he found a microorganism which has answered all of the cultural tests of the Eberth bacillus. He has also shown that other toxicogenic germs isolated from drinking water produce in the intestine of animals lesions similar to those produced by the Eberth bacillus, but which on closer examination were not of this germ. In addition to the above it has been repeatedly proven that the bacillus typhosus is capable of pus production, not only in the soft parts but also in bone. Sternberg calls attention to the fact that the typhoid bacillus probably originates the process of pus formation, but shortly dies and is only to be found in the abscess walls. However, this paper, instead of discussing the positive side of typhoid, is intended rather to consider those cases which, although resembling typhoid in many features, still lack the conclusive tests.

In the first place we must admit that no one symptom or pathological finding, with the one exception of the presence of the bacillus typhosus, is considered absolutely conclusive of the presence of typhoid infection. It will be more readily understood when I state that the Peyer's patches can only be demonstrated to be affected by post mortem examination, and then to be conclusive it should be shown that the bacillus ty-

\*Read before the Minnesota Academy of Medicine, April 6, 1899.

phosis is also present. We are today leaning much more strongly to the chemical and bacteriological tests than to the gross pathological changes. The former idea that a continued fever with morning exacerbation and evening rise was conclusive of the presence of typhoid, is particularly disproven, and the eruption, diarrhoea and nose bleed, while possibly of value, are placed in the same category as of diagnostic value but not conclusive. I believe we can state that where the bacillus typhosus is found producing symptoms of infection, whether we find the orthodox symptomatology or not, we are justified in making a diagnosis of typhoid. We must remember, nevertheless, that pyrexia is not necessarily present for such diagnosis; neither is it absolutely necessary that Pcyer's patches be involved. The later researches of Osler and others have demonstrated that the bacillus typhosus is occasionally found, pathologically, not only in the intestinal tract, but also in the spleen, kidney and urine, in the meningeal fluid, in the thyroid gland, and in the respiratory tract.

A great step, both positive and negative, in the correct diagnosis of this class of cases, is the discovery of the tests of Widal and Ehrlich. And while the latter is found not to be positively conclusive, and the absence of the former not positively negative, no case can be insisted upon as typhoid where the Widal reaction has not been present some time during the course of the disease. It would appear that where the test fails to respond during a late stage of a condition of seeming typhoid, and where all other conditions for which it might be mistaken are excluded, it is possible that the colon bacillus may in some unaccountable way play some rôle in such conditions. Many French writers not only admit such a causation but urge the recognition of a colon typhoid. Some original investigators today believe that such cases acquire extraordinary virulence. Here the Widal reaction of the typhoid germ is absent, but present if the bacillus coli communis is used. To recapitulate therefore, the presence of the Eberth bacillus is conclusive evidence of typhoid, but as this cannot be discovered before the second week we shall consider those cases in which, although they resemble typhoid, still, the positive tests being absent a positive diagnosis cannot be given. However, in this list, where the Widal test is negative, many will finally be shown to be cases of true typhoid and the test will be found in a later stage of the disease. Of the cases liable to be diagnosed as typhoid are tuberculosis—acute pulmonary and the several peritoneal forms—cerebro-spinal meningitis, appendicitis, psoas abscess, tubercular meningitis, typhus fever, the many varied forms of malaria, pernicious anæmia, acute alcoholic dementia, infectious pneumonia of an epidemic nature, and so forth.

Here we should consider the fact that while the primary infection of typhoid is usually in the intestinal tract, still, occasionally, this is not the case. Osler reports cases where the bacillus typhosus was found post mortem as causing a cerebro-spinal meningitis, the intestinal symptoms appearing secondarily. It has also been quite conclusively proven that the organism will produce a true pneumonia without any intestinal lesions being discovered. A late report from the Johns Hopkins Bulletin is so conclusive as well as interesting, that I reproduce it here. It is reported as a case of typhoid infection without intestinal lesions. The case was one of gangrene of the lung with pyo-pneumo-thorax. There was nothing in the history of the case to suggest typhoid. The patient was admitted to the hospital two days before death. The only condition shown by the autopsy was thrombosis of a branch of the pulmonary artery, gangrene of the lung and perforation of the pleura. There was no glandular enlargement anywhere and although the spleen was described as an acute splenic tumor it weighed only 160 grammes. Cultures from the blood and various organs gave bacilli which responded to all of the tests for bacillus typhosus, including the serum reaction. None of the organs showed tissue change common to typhoid. Another report worthy of notice was that of a man forty-three years of age who had been treated a time for diabetes mellitus, and who was suddenly attacked with pain and stiffness in the neck and delirium. Some of the cervical glands were enlarged and the patient complained of pain on swallowing, but examination of the pharynx was negative. The temperature for some days rose after the manner of a typhoid curve, the pain in the neck disappeared, the patient became stupid and the spleen enlarged. On the seventh day roseolar eruption appeared, but disappeared again in twenty-four hours. The urine contained albumen, sugar and an increased amount of urobilin. There was constipation, and a diagnosis of typhoid was finally made. On the tenth day the patient died. The autopsy showed absence of typhoid lesions. The enlarged spleen gave cultures of staphylococcus pyogenes flavus, and more careful examination showed a phlegmonous inflammation of the retro-pharyngeal tissue, due to the same coccus.

Of the following cases all have occurred within the circle of my knowledge:

Case I. A lady, forty-nine years of age, corpulent, sallow complexion, constipated habit, when first seen by physicians was confined to bed and gave history of prolonged prodroma. Temperature in the morning 100°, and occasionally 103° in the evening. Occasionally chills, no material enlargement of the spleen but marked hepatic hypertrophy. A diagnosis was given the

family of typhoid, but as the case did not improve they became dissatisfied and demanded consultation. The patient had been suffering for some years with repeated attacks of biliary colic, and the enlarged gall bladder could readily be felt through the abdominal walls. The case was clearly one of cholelithiasis, with infection and secondary abscess of the liver. Over one pint of pus was drawn off at the first aspiration. Patient died of general sepsis.

Case II. A high school student was taken after a brief prodromal period with severe headache and elevation of temperature followed with low, muttering delirium. Here a diagnosis of typhoid was made, although the entire symptomatology was indicative of cerebral disease. Death occurred after four days of sickness. Post mortem showed an extensive abscess the size of a small orange in the anterior cerebrum. It was thought by the physicians making the post mortem examination that some extensive inflammatory process must have been in progress while the young man was still attending college.

Case III. A young girl, fourteen years of age, was suffering with double mastoid infection, temperature  $103^{\circ}$  F. The attending physician with the consultant called the attention of the parents to the necessity of immediate operation. Another physician, however, being called in, informed the parents that the original diagnosis was incorrect: that the case really was one of typhoid. The change of diagnosis deterred the parents from consenting to operative procedure, and the patient died after forty-eight hours of septic meningitis.

Case IV. Young man, twenty-two years of age, taken with slight chill, irregular temperature. Abdominal tenderness in the ileo-cæcal region. Family physician made a diagnosis of typhoid fever. The case not progressing favorably a surgeon was called in and made a diagnosis of appendicitis, although the well known tenseness over the abdominal muscles was entirely absent. Operation advised, family physician dissenting. However, the patient was finally removed to a hospital and abdominal section performed. The appendix was found, bound down by adhesions in the pelvis and partially gangrenous. The usual operation was performed; temperature at once dropped to normal, convalescence uneventful.

Cases V., VI. and VII. These occurred in the family of a gentleman holding high position in this state. All cases occurred within a few days of each other. All commenced with gastrointestinal symptoms, elevation of temperature, prodromata of short duration. As the milk used in the family was purchased from a neighbor where two were sick with typhoid it occurred to the attending physician to have a sample of it sent to a bacteriologist. Examination showed

the bacillus typhosus and also positive presence of tyrotoxin. While it cannot be claimed that the latter poison would produce symptoms resembling typhoid, we can readily see that the existence of such a poison might mask the early progress of such a case. Some have thought that the tyrotoxin might have been the main factor in these cases, but Dr. Vaughan, who is certainly an authority on this subject, opposes the idea. Dr. Vaughan, commenting on the subject, says:

"I cannot believe that tyrotoxin alone can produce symptoms simulating typhoid. I have no doubt that there are many varieties of the typhoid bacillus but that tyrotoxin can produce a prolonged fever I cannot believe. It is a chemical poison and like other chemical poisons must manifest its action speedily and I don't believe it possible to produce continued fever."

Although all of these cases were complicated by the presence of the tyrotoxin they recovered.

Case VIII. J. R., a young man suffering from secondary syphilis, after a prolonged alcoholic debauch was seized with an acute maniacal condition, some elevation of temperature, complete anorexia and followed by a general condition of dementia. The case being one of county charge the attending physician informed the Board of County Commissioners of its nature and advised his committal to a hospital for the insane. The Chairman of said Board not accepting the diagnosis, another physician was instructed to visit the patient, which he did and reported the case as one of uncomplicated typhoid, but no improvement being noticed after five weeks of treatment, he was finally committed to the Rochester Hospital. At last report no improvement had been noticed in his mental condition. It is now about twelve years since his commitment.

Case IX. A lady thirty-four years of age, after some days of irregular symptoms, was seized with chills, moderate elevation of temperature which gradually rose from  $100.5^{\circ}$  to  $103^{\circ}$ , and after the third day to  $105^{\circ}$  and over. As this case lived in a neighborhood where typhoid fever was epidemic a diagnosis of probable typhoid was made and a sample of blood was sent for examination to Prof. Westbrook. Report was negative, and after a few days, the temperature still being high, a second sample was sent with like results; and again a third. Finally an enlargement was discovered over the eighth dorsal vertebra, and aspiration demonstrated the presence of pus. After free evacuation the temperature dropped to normal. Two weeks later an appendiceal abscess developed, necessitating operation. Thereafter recovery was uneventful.

These cases will certainly demonstrate the difficulty of making an exact diagnosis in cases

of prolonged fever, and as our knowledge becomes more extended the unscientific terms formerly in vogue, such as gastric fever, continued fever, bilious fever, typho-malaria, etc., are being consigned to the list of obsolete terms, although I will admit that there may, possibly, exist conditions which may allow the term typho-malaria to be used. All such terms are, however, confusing and certainly misleading. It is still unproven that the malarial parasite and the Eberth's bacillus are found simultaneously. As the one appears the other disappears, the one being rather a sequel to the other than a true complication. The late war has again awakened an interest in this question, and the solution will finally be on the line above stated. It would appear, however, that after the typhoidal, malarial and irregular cases have been carefully excluded, there is still room for a revised nomenclature of a percentage of cases where no one term seems entirely applicable.

The serum reaction appears to have demonstrated that while many cases not usually diagnosed as typhoid are really of this disease, there is still an organism producing a mild or moderately severe fever of from two to three weeks' duration undiscovered. To this class belong many of the so-called abortive cases of typhoid.

Finally, if this paper assists in recalling the difficulty of making an exact diagnosis in cases resembling typhoid the object of the writer has been attained.

### THE CLINICAL IMPORTANCE OF THE POSITION OF THE STOMACH.\*

BY HENRY WALD BETTMAN, M. D.,

Cincinnati.

The position of the abdominal viscera has been the source of much discussion in recent years. Careful observation has revealed the fact that some of the most important organs within the abdominal cavity are subject to pathologic displacements to a degree little suspected a generation ago. Movable kidney, instead of being considered a rarity, is now known to be an exceedingly common condition, especially in the female. Descent of the intestines in toto, as a condition to be dealt with from a clinical standpoint is a revelation of the past fifteen years. Prolapse of the stomach, or more concisely expressed "gastroptosis," is a very modern concept indeed. The fact of prolapse is clearly demonstrated and acknowledged on all sides. The significance of prolapse is far from being understood. There are writers who attach immense importance to the downward displacement of the

abdominal viscera, and find in that pathologic condition the root of many of the nervous and dyspeptic troubles to which women are liable. Glenard thought he had found the anatomic basis of neurasthenia and other neuroses in descent of the intestines which he called enteroptosis. Meinert thought that gastroptosis was an invariable antecedent of chlorosis, and that chlorosis was a neurosis of which prolapse of the stomach was the indirect cause. On the other hand there are writers who attach little or no importance to the position of the stomach, the intestines and the kidneys.

Inglis, of Detroit, has recently stated that it makes little difference if the pylorus point east, west, north or south, or whether the folds of intestine lie high or low within the abdominal cavity. The attitude of the general practitioner to the question is one of indifference; and a careful investigation of the position of the abdominal viscera has not become a routine procedure, even in the treatment of abdominal diseases.

That the subject is one of great importance no one who has given the matter any thought can deny. That it is a peculiarly difficult field of investigation everyone who has entered upon it will readily admit.

During the past few years I have devoted considerable time in the post mortem room and in the clinic to the position of the abdominal viscera, and beg the privilege of presenting some of the conclusions reached. And first, in regard to the intestines, especially the colon. The transverse colon played an important role in the pathogenesis of enteroptosis as outlined by Glenard. According to him, the overloaded colon drags on its peritoneal supports; the hepatic flexure is the first part to descend; this drags on the omentum and secondarily the stomach and the right kidney become displaced. Now, in the post mortem room it is impossible to form a clear idea of the significance of the position of the colon. The position of the intestines as pictured in the text-books is rarely encountered in the necropsy room. The colon is subject to the greatest variations. The transverse colon is rarely quite transverse; often it is looped in capricious fashion, the turn of the loop running down toward the pelvis or up over the stomach or liver. Sometimes the colon is distended, filling a large part of the upper portion of the abdominal cavity; sometimes it is partly contracted, partly dilated. The cœcum occasionally is found high in the abdomen; the sigmoid flexure sometimes is found in the median line or on the right side.

It is even more difficult to draw conclusions from the position of the small intestines. In a small proportion of cases the whole mass of intestines is unmistakably displaced downwards (a

\*Abstract of a paper read before the Ohio State Medical Society.

true condition of enteroptosis), but in the vast majority of instances it is impossible to say whether the small intestines lie normally or abnormally. The kidneys also present great difficulties to post mortem investigation. Occasionally their movability or prolapse is evident even to careless observation; but, as a rule, the exact position of the kidneys in the mass of retroperitoneal fat and their movability are hard to determine with accuracy and certainty.

The stomach on the other hand is more accessible to accurate investigation; and we can ascertain at the necropsy just how the stomach lay *intra vitam*, and what relation it bore to other viscera. I have studied the normal position of the stomach in many cases in the following manner: As soon after death as possible I made an œsophagotomy and introduced a stomach-tube through the œsophagus into the stomach, which was then filled with one and one-half to two quarts of water. The tube was then clamped and the abdominal cavity opened. The cardiac orifice is invariably fixed on the body of the tenth dorsal vertebra somewhat to the left of the median line. The fundus rises usually to the level of the sixth rib in the left anterior axillary line, often as high as the fifth rib, lying in some instances behind the apex of the heart. The pylorus in the male lies just to the right of the parasternal line on a level with the first lumbar vertebra, or somewhat lower. The pylorus is always movable. The lesser curvature is completely covered by the liver. So much for the normal position as found in children of both sexes, and as a rule in the adult male. In the adult female this position is met with in only a small minority of cases. In most adult women the pylorus has become movable to the extent of one to three inches so that it can easily be drawn below the free margin of the liver. Owing to this displacement downwards and to the left of the pylorus the stomach in women assumes a more vertical position than in the healthy male and the lesser curvature instead of being entirely covered by the liver may come to lie in direct apposition to the anterior abdominal wall. In other words, in the large majority of all adult females, the stomach is prolapsed. Prolapse of the stomach also occurs in a certain proportion of adult males, but the number is scarcely ten per cent. of all males afflicted with dyspeptic troubles. This descent of the stomach in the abdominal cavity causes the greater curvature of the stomach, especially of the pyloric half, to lie much lower than normal, and in many cases it reaches far below the umbilicus. This fact has been one of the most fruitful sources of error in the field of digestive disorders. The literature of the past fifteen years teems with references to dilatation of the stomach and atonic distention of the stomach, and a host of physicians

under the guidance of Bouchard have raised mountains of theory on the assumption of an auto-intoxication of the system through the retention of food in dilated stomachs. Perhaps it is a bold statement, but idiopathic dilatation of the stomach is probably a mythical disease. In certain exceedingly rare instances acute dilatation of the stomach occurs in the course of other diseases. Aside from these cases, dilatation of the stomach in the adult without obstruction at the pylorus rarely or never occurs. Bouchard based his diagnosis of dilatation on a succussion-splash obtained below the umbilicus. Nothing could be more fallacious. It is evident from what has been stated above that when the stomach is prolapsed a succussion-splash may often be elicited low in the abdomen. No method which takes only the greater curvature into account can be considered a reliable method of diagnosing dilatation. The differentiation between prolapse and dilatation can be made only by locating the position of the lesser curvature. I shall not enter upon the various methods of mapping out the lesser curvature. The only reliable means at our command are first the distention of the stomach with air or carbon dioxide and subsequent percussion, and second the transillumination of the stomach by means of the gastrophane.

When these methods are applied to the living the same results are obtained as from post mortem study. Prolapse of the stomach can be demonstrated in the great majority of adult women.

Extreme dilatation of the stomach, artificially produced with carbon dioxide, will usually reveal to the eye the course of the lesser curvature running below the free margin of the liver. The large majority of men have stomachs normally placed. Men of the phthisical habitus, men the subject of long standing emphysema and others with narrow chests and long waists often present the condition of gastropnoia. In other men it is exceptional.

It is not the purpose of the present paper to discuss the causes which produce this abnormality in the female sex. There is no doubt that corsets and skirts fastened about the waist play the chief role in its production. We are confronted by the undeniable fact that in the majority of women a demonstrable prolapse of the stomach does occur, accompanied, in a fair proportion of cases by prolapse of the right kidney. It is our task to determine whether this abnormality produces symptoms or not, and, if so, what symptoms. The problem is an exceedingly intricate one to solve. There is no doubt at all that a large number of women, though their stomachs are prolapsed, enjoy perfect health. It is likewise true that many women suffer for a



time with symptoms which might be referred to gastroptosis and later recover entirely from the symptoms, though their stomachs remain in their abnormal positions. It is notorious that the very aged rarely have symptoms which could be ascribed to malpositions of the abdominal viscera, although, in the aged, ptosis of the viscera is very common. It would be very crude reasoning to infer from the above that ptosis of the stomach and of the other abdominal viscera is a perfectly harmless condition.

It is well known by those who have studied the question before us that the symptoms of gastroptosis lie largely in the domain of nervous dyspepsia; that they affect with predilection the neurotic and those of weak nerves; that these symptoms are apt to begin at a time when the patient for one reason or another is subjected to nerve strain. The symptoms of nervous dyspepsia are too well known to need a lengthy description here. The patients usually complain of weight in the epigastrium following the ingestion of food; of bloating and belching. Often the epigastric distress becomes unendurable, occurring at night and disturbing the sleep. A dragging sensation in the back is common. The appetite is usually good but some loss in weight follows the self imposed restricted diet. The bowels are usually constipated, the tongue clear or only slightly affected. This stage of nervous dyspepsia often lasts for years; sometimes it progresses into marked neurasthenia. This advance is accompanied by increase in the extent of the visceral ptosis, and often a state is reached in which the patients become pronounced invalids, and in which the stomach, intestines and one or both kidneys are markedly prolapsed. The great clinical significance of prolapse of the stomach is this: that in those otherwise predisposed it leads to distinct nervous symptoms of a dyspeptic nature, which in turn react upon the general nutrition and the condition of the nervous system. Marked prolapse of the stomach undoubtedly gives rise in some cases to various forms of visceral neuralgia and sensations of a dragging nature; and this constantly acting irritation may lead in neurotic individuals to profound hypochondria. Meinert thought that the solar plexus was dragged upon by the prolapsed stomach; that thereby its fibres which supply the spleen and control the formation of hæmoglobin were deranged, and that in this manner prolapse of the stomach was a predisposing cause of chlorosis. This theory, though plausible if not carried to extremes, is unfortunately incapable of scientific demonstration.

Although this paper, by its title is limited to prolapse of the stomach, it is impossible to discuss gastroptosis without relation to ptosis of the other viscera. One-seventh to one-eighth of all dyspeptic women have a movable right

kidney, and, in a certain number of these, some prolapse of the intestines (however vague the term) does occur. Now, the derangement of visceral sensation produced by descent of the stomach is undoubtedly augmented in many instances by symptoms referable directly to the right kidney and the bowels. It is impossible to dogmatize on the subject one way or another in the present imperfect state of our knowledge. It seems certain that many symptoms of nervous dyspepsia and of obscure abdominal neuralgia cannot be treated successfully until their origin in displacement of one or more of the abdominal viscera is recognized. The intensely practical part of this subject is that which relates to treatment and here as in every other case the physician must individualize.

I could cite numerous cases of nervous dyspepsia, accompanied by gastroptosis, which have been greatly benefited by the use of an abdominal bandage; and still an abdominal bandage is indicated in comparatively a small proportion of cases. Those persons in whom the symptoms due to gastroptosis have supervened upon psychic or emotional strains are usually more benefited by general systemic and tonic treatment than by local measures. In the hypochondriac it is better to divert the mind from the abdomen than to direct attention to it. The prolapse itself is very rarely curable. All we can hope to accomplish is to overcome the resulting symptoms, and, as a rule this is best done by building up the general health. The dyspepsia often calls for special treatment. In such cases a chemical examination after a test breakfast is often necessary to guide us successfully to a correct diet. Usually hyperchlorhydria is present in marked cases; often, however, the gastric secretions are normal and sometimes the secretion is greatly reduced.

Especially in advanced cases of general enteroptosis is an understanding of the underlying anatomical conditions of great value in treatment. Many chronic invalids can be practically cured by overcoming the constant dragging by the viscera on their supporting ligaments. Glenard has advised for pronounced cases an abdominal bandage, laxatives, alkalis and a meat diet, and these directions, rationally carried out, are of immense benefit in many cases. After some of the symptoms have been relieved gymnastic exercises intended to strengthen the whole system and especially the abdominal muscles may be of value. Each patient must be treated on lines determined by a study of the patient himself. The present paper was intended simply to call attention to the fact of gastroptosis as an underlying condition in many otherwise obscure cases and to warn the profession against the indiscriminate diagnosis of dilatation in cases of simple prolapse of the stomach.

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## AN INCREASE OF CANCER.

Although not only the medical profession, but also the general public, has noted for some time the increased prominence of cancer as a cause of death, none were quite prepared for the rather startling statement of Roswell Park, that if the late relative increase in the deaths from cancer continued, in ten years there would be more deaths in New York state from cancer than from consumption, smallpox and typhoid fever combined. He says further that cancer is the only disease whose death rate has been shown by the returns to be steadily increasing. Thus in 1887 there were in the state 2,363 deaths from cancer and 11,609 from consumption, while in 1898 there were 4,456 deaths from cancer and 12,552 from consumption.

Various attempts have been made to show that these figures are misleading, and that the increased mortality from cancer is apparent rather than real. One writer claims that improved methods of diagnosis have resulted in bringing to light many cases of cancer which under old methods would have been reported as something else. To support this claim he states that there is a greater increase in cancer among males than among females. As internal cancer is more common among males, and is at the same time very difficult of diagnosis, it would follow that improved clinical methods of investigation would reveal a larger proportion of cases among males. Furthermore, it is unquestionably true that post mortem examinations are made in an ever in-

creasing proportion of cases, and that cancer is revealed by them in a strikingly large number where its presence was not suspected during life. This is proved by the actual statistics of hospitals where autopsies were formerly the exception, but are now the rule. Again the argument is urged which was made in these columns several years ago that the constant advances of hygiene, of medicine and of surgery are more and more lowering the death rate from other diseases, and in some cases, for instance ovarian cyst, practically abolishing it. Meantime but little has been gained in the treatment of cancer, which is thus forced into relatively greater prominence.

From time to time a claimant comes forward with the announcement that the microbe of cancer has been found. This was quite a prominent piece of news in the daily newspapers a few months ago, the report coming from France this time and being accompanied with the announcement of the usual sanguine expectations that the discovery of the cause of the disease would soon be followed by that of its cure. Whatever may be the result of this particular discovery, there is little doubt that cancer itself is due to the presence of some living organism whose existence will some day be demonstrated in the usual way. Except upon the assumption of a microbic cause, many of the phenomena of cancer would be unexplainable.

Speaking of the phenomena of cancer suggests one that is not very well known, and that is the striking prevalence of the disease in certain localities. In the little town of Luckan, in Germany, for instance, the disease may be called endemic, since during the past twenty-three years there have been seventy-three deaths from cancer within an area comprising but two or three city squares, as many as four of the deaths occurring in one house. Repeatedly has cancer been observed to afflict a single town, a single street or a single house, occurring in the one locality with a frequency far out of proportion to its prevalence in the neighborhood. Other observations go to show that the highest death rate from cancer occurs in regions periodically overflowed or else close by rivers, while districts having the lowest death rate from cancer are situated upon high, well drained land, where the physical features of the country are such as to preclude the possibility of floods.

To offset the increase in the death rate from cancer but little gain has been made in the treatment of the disease. Except with cancer of the skin, the prognosis is generally bad, much as always. A few radical cures are made where the disease is in organs easily reached and removed, like the uterus or testicle, and the results from excision of the breast have considerably improved since the introduction of the very radical operations of Halsted and others, but the internal cancers, those of the stomach, intestines, pancreas, etc., are as deadly as ever, although occasionally offering a field for a short-lived surgical "triumph," whose chief interest to medical men is to demonstrate that the so-called vital organs are none of them absolutely essential to existence.

## REPORTS OF SOCIETIES.

### Minnesota Academy of Medicine.

R. O. BEARD, M. D., Secretary.

Stated meeting, Wednesday, April 5th, at the Hotel Ryan, St. Paul, the president, Dr. C. G. Weston, in the chair.

Dr. J. Clark Stewart, of Minneapolis, presented two specimens.

A paper upon "The Quarantine of Diphtheria" was read by Dr. H. M. Bracken. The discussion was opened by Dr. Justus Ohage, of St. Paul, referring to the difficulty of establishing a line of dependence between the clinical and the bacteriological diagnosis of diphtheria.

Dr. O. C. Strickler, of New Ulm, spoke of the closing of churches and schools as a means of quarantine.

Dr. A. W. Abbott, of Minneapolis, discussed the regulation of school children in the premises.

Dr. C. E. Bean, of St. Paul, said that the diphtheria bacillus was to be found in many throats. He would allow people to go in and out if not directly in contact with the patient.

Dr. J. Clark Stewart, of Minneapolis, took exception to quarantine based upon bacteriological findings alone. To follow a case up for 110 days might be a bacteriological ideal, but it was not practical.

Dr. Thomas McDavitt, of St. Paul, asked if it was necessary to have the diphtheria bacillus in order to establish a diagnosis of diphtheria. He referred to two cases of diphtheritic conjunctivitis, in brother and sister, with slow pulses and sub-normal temperatures, in which antitoxin was given, but in which the bacteriological diagnosis was negative. Dr. McDavitt was asked where the culture was obtained, whether from the nose

or the throat. He said that it was obtained from both.

Dr. Gustav Renz, of St. Paul, gave the opinion that the Klebs-Loeffler bacillus was never found excepting in a diphtheritic throat. It lost virulence with time and disappeared more quickly in cases injected with antitoxin.

Dr. L. A. Nippert, of Minneapolis, stated that, in his judgment, the presence of the Klebs-Loeffler bacillus alone does not establish a diagnosis of diphtheria. He believed that cases were harmless in which the clinical symptoms had disappeared, and thought that the prolonged continuance of quarantine might do harm rather than good by prolonging the exposure.

Dr. J. Clark Stewart, answering Dr. McDavitt's inquiry, stated the belief that as true diphtheria, clinically, might result from other germs than the Klebs-Loeffler bacillus. He quoted Prudden with reference to the streptococcus diphtheria in a New York epidemic.

Dr. C. H. Hunter, of Minneapolis, inquired whether the present law was sufficient to quarantine diphtheria effectively.

Dr. Ohage, of St. Paul, said that he should like the advice of the members as to the best means of stamping out smallpox. At present St. Paul was quarantining houses, vaccinating people in whole blocks and disinfecting and re-disinfecting.

Dr. Nippert gave his opinion in favor of vaccination. He questioned whether all cases could be sent to a quarantine hospital.

Upon motion the Academy adjourned.

## SECTION ON OPHTHALMOLOGY.

### College of Physicians of Philadelphia.

HOWARD F. HANSELL, M. D., Clerk.

Meeting April 18, 1899. Dr. George C. Harlan, chairman, in the chair.

A Note on Holocaine. — Dr. Wm. F. Norris said that it is well known that holocaine has found tolerably widespread acceptance as a local anæsthetic for the cornea and conjunctival sac, and that claims have been made for it as an antiseptic and germicide. He has used it in a considerable number of cases in both hospital and private practice, and has been specially gratified by its effects on corneal ulcers. In several such cases which have for many weeks dragged along with slight progress and frequent relapses, great improvement has been manifested from the use of holocaine, as shown by rapid diminution of the infiltration area, and later by healing of the ulcer. The method of application has been by flushing the conjunctival sac with a one per cent. solution, and by touching of the floor of the ulcer with a little cotton swab saturated with

it. It has been a question in his mind whether holocaine was really a germicide or whether it simply afforded a medium which was unfavorable to the growth of microbes. He therefore called in Dr. D. H. Bergey, of the Laboratory of Hygiene of the University of Pennsylvania, who found that a one per cent. solution of holocaine applied to staphylococcus colonies had no effect in one-half an hour, but killed all of these microbes in two and one-half hours. A 1 to 1,000 solution of mercuric bichloride has a nearly similar effect; for two hours after the application the staphylococci were still alive.

In the discussion Dr. Friebeis said that he had been favorably impressed by the use of holocaine as an anæsthetic in tenotomy, and considered its non-effect upon the iris and ciliary muscle a decided point in its favor. In reply to a question of Dr. Oliver as to its action upon the corneal epithelium, Dr. Norris replied that the desquamation was inconsiderable. Dr. Hansell stated that he had used holocaine constantly for several weeks in a case of neuro-paralytic keratitis, with the gratifying results of relief to the severe pain, the reproduction of the corneal substance, and healing of the ulcer. Dr. de Schweinitz has used it in a case of hypopion-keratitis with decided advantage. In reference to the strengths that can be used, Dr. Oliver referred to the recent researches of Scrimin on the so-called oily collyria, in which it was determined that pure holocaine can be mixed with oil in the strength of three per cent. at a temperature of 80° C.: the author finding the chief advantages of the plan being the increased power and the rapidity of action of the drug when placed in such a menstruum.

Dr. Wm. F. Norris exhibited a patient upon whom he had operated for symblepharon, by transplanting a piece of skin from behind the ear on to the raw surface of the eyeball. The transplant had healed without sloughing. The increase in rotation of the ball was marked.

Dr. Charles A. Oliver demonstrated a new method (a modification of Frost's and Morton's plans) for the implantation of glass balls into the orbital cavity in cases of enucleation. After freeing the conjunctiva from the globe at the corneal limbus and dissecting it back so as to expose the tendons of the four recti muscles, each of the lateral muscle tendons is secured by a long, continuous catgut suture and freed from the eyeball. The vertical recti muscles are dealt with in the same way. Working in between the broad loops of catgut holding the ends of the muscles, the eyeball is enucleated without difficulty. The capsular cavity is thoroughly cleansed, and a glass ball which is water-tight and about three-fourths the size of the normal globe is placed in the situation previously occupied by the globe. The cut ends of the lateral recti are sutured together, fol-

lowed by the vertical recti, thus enclosing the sphere within Tenon's capsule. The cut edges of the overlying conjunctiva are brought together by a series of silk threads, and the operative field is covered by a gauze protective bandage upon which iced compresses are placed. There is no reaction, and the socket is ready for the insertion of an artificial eye in a very brief time; in fact, earlier than after ordinary enucleation. The results are fully as good as those obtained by Mules' method. The operation is offered on trial for cases in which abscission, keratectomy, or evisceration with insertion of artificial vitreous is impracticable or impossible, thus affording opportunity to obtain well-fitting and freely mobile artificial eyes.

In the discussion, Dr. Harlan called attention to the fact that Mr. Carter was in the habit of closing the wound in abscission of the cornea by suturing the muscles over it after freeing them from the ball. He also stated that Dr. Risley had shown him a case in which a Mules ball inserted after enucleation had dropped out of the muscle-cone. He thought that the largest-sized Mules ball was too small for this purpose. Dr. de Schweinitz had employed Suker's method of preparing a stump for an artificial eye, i. e., the suturing together of the recti muscles with catgut and the conjunctiva with silk after complete enucleation, and had produced an excellent cosmetic effect, which, however, he felt sure would be temporary owing to later shrinking of the tissues. Therefore, he thought Dr. Oliver's suggestion an admirable one.

Dr. P. N. K. Schwenk reported, by invitation, several cases of dislocation of the eyeball. Traumatic dislocation may be simple or compound. In the former, the orbital tissues are stretched only, in the latter they are lacerated and the ball may have suffered injury, and in both the ball lies in front of the spasmodically closed lids. Case I. A child, blind from birth, while stooping ran a spear into the right orbit. Case II. A small terrier dog was run over by a heavy wagon, the wheel of which passed over his neck. The left eye was completely extruded. A canthotomy was done, when the ball jumped back into the orbit with a thud and the lids closed in front of the cornea. The eye made a complete recovery. Case III. A man in falling struck his face (probably the external orbital angle) against a table. The eye and its adnexa were badly bruised and torn, demanding enucleation.

Dr. Wm. Campbell Posey reported a case of complete monocular blindness from a head-injury, followed by full restoration of vision. The case was that of a young man who had received a hard blow over his left eye by the occiput of his child's head while at play. The patient was quite stunned for fifteen minutes and suffered excruciating pain in his left eye and temple. The

skin was not broken, and there was no hemorrhage into the conjunctiva, or from the nose or mouth. Vision was unaffected until thirty-six hours after the accident, when a veil appeared to drop over the affected eye. Five days after the accident, the eye was totally blind, the pupil was stationary to light stimulus, the head of the optic nerve was pale, and the venous pulse showed marked alterations in rhythm. The patient was placed in bed and leeches, his bowels opened by salines, and free diaphoresis obtained by jaborandi. This was followed by mercurial inunctions and later by potassium iodide. After three days of this treatment there was light perception in the upper nasal field, and in three weeks vision returned to normal. The fields of vision which were obtained as soon as sufficient sight was regained to make this possible, were interesting, as they showed a small, absolute, central scotoma and a larger, paracentral, relative scotoma. The author attributed the lesion to a fracture through the orbit, probably through the roof of the sphenoid, rejecting the explanation offered by Nettleship in three somewhat similar cases of a hemorrhage into the sheath of the nerve.

Oculo-Motor Paralysis from Typhoid Fever, With a Case.—Dr. de Schweinitz reported a case of complete, right oculo-motor paralysis without involvement of the ciliary muscle, occurring in a man aged 22, during the relapsing period of a severe case of typhoid fever. Four months after the attack the ptosis had disappeared, but there was limitation of the upward, downward, and inward rotations, the inward movement being most limited. Dr. de Schweinitz briefly reviewed the literature of extraocular muscle palsies occurring as a complication of typhoid fever, and thought his case might be explained by a meningitis, or perhaps by an effect of the disease directly upon the oculo-motor nerve, producing a neuritis, precisely as it produces neuritis of other nerves in the body, notably those supplying the extremities.

In the discussion, Dr. C. A. Oliver asked if the case showed any albuminuria, as he was at present studying an excellent example of the nuclear type of relapsing oculo-motor palsy following chronic nephritis from typhoid fever in a young woman, that served as an illustration of Knies's belief of association of the two causal conditions. Dr. de Schweinitz replied that albuminuria was not a factor in his case.

Is There a "Hypermetropia Acquisita?"—Dr. B. A. Randall challenged the common view that there is a natural reduction in the refraction of the eye, and called for any competent evidence of it. That nearsight grows less annoying is generally ascribable to the narrow pupil of age; that farsight appears, which had been previously unnoted, is due to waning of the accommodation

which had covered it. Flattening of the lens is a little proven as the popular idea that the cornea flattens; and the claim that the lens-layers become more homogeneous in refraction-index with age seems contrary to most of the known facts. The cases scientifically observed through the period from 55 to 80 must necessarily be few, and many will show increase of refraction from cataractous changes in the lens; unchanged refraction in a cited case in point might be plausibly but inconclusively ascribed to this, and in any showing decreased refraction proof that previous measurements were unimpeachable, will be virtually impossible. Mydriatics are rarely used in presbyopic eyes, and can fail as signally to abolish spasm in them as in younger eyes; accommodation is present, although its range is shortened, and Donders even represents a diopter as remaining at 80. The apparent confirmations of "H. acquisita" prove too much both in degree and rapidity of change, as in a case cited where  $H = 1.50$  at 54 became  $H = 3$  at 68, just as may happen in a few months with young eyes. Old eyes, like young eyes, are generally hypermetropic, often in notable degree; but the assumption that they are emmetropic in the middle period of life lacks scientific basis.

Dr. C. A. Veasey reported a case of double choked disks in a quiet otitic thrombosis of the sigmoid sinus, without pyæmia. The patient was a twelve-year-old boy who had had an attack of diphtheria, mild in character, about four months before the appearance of the aural symptoms. At the time of the appearance of the latter there had been an unusually severe attack of earache with a mastoid abscess, from which he seemed to recover after evacuation by the attending physician. Two weeks later there was a facial paralysis of the same side, severe frontal headache, repeated vomiting, great emaciation, but no retraction of the head, no mastoid symptoms, and but slight elevation of temperature. The mastoid was opened by Dr. W. W. Keen and found filled with pus, and the wall of the lateral sinus gangrenous. The latter contained a half-decomposed clot extending nearly to the torcular Herophili. Recovery from the local condition was prompt. On the day of the operation, three days after the appearance of the cerebral symptoms, a very slight œdema of the disks was found, which, although the operation had been performed, continued to increase in intensity until typical choked-disks, with an enormous amount of exudate and hemorrhages, were present. Later there appeared paralysis of the accommodation in each eye and paralysis of the right abducens. After several weeks these conditions subsided, and two years later there was a large, central, absolute scotoma in the left eye, with visual acuity of 6/100 and a narrow, annular, relative scotoma in the right eye, with visual acuity of 6/7.5.

Discussion.—Dr. Randall stated that such patients are in the earlier stages free from ophthalmic symptoms, and when they appear it is as frequently the side opposite to the lesion that is affected. Similar symptoms are found in pachymeningitis and disturbances of the dura mater. Dr. Harlan was reminded of the first choked-disk he ever saw, which occurred in a case of old middle-ear disease in a delicate young girl. As there was no other symptom than violent headache, the ophthalmoscope was used as a means of diagnosis between intracranial disease and pronounced hysteria. After death a cerebral abscess was found separated from the carious tympanic roof by sound brain tissue.

Dr. G. C. Harlan reminded the Section that he had shown, about a year ago, a pair of bifocals made by Borsch in which the reading part is formed of a circular lens 15 mm. in diameter, made of flint glass and sunk into the distant lens made of crown glass. The increased refraction of the small lens depends upon the higher index of flint glass, and its exposed surface is ground to the same curve as that of the larger lens. He has been in the habit of using these glasses in operating as well as in reading, and has found them entirely satisfactory. Recently Mr. Borsch has still further improved these lenses by burying the reading lens in the interior of the other so that it is practically invisible. The large glass is split into halves which are cemented together after the small one is inserted between them.

The glasses, which were exhibited, present no indication of their method of construction which is a veritable puzzle to the uninitiated.

Dr. Thompson spoke in favor of the lenses, both from personal experience and that of his patients. He finds that the position and shape of the small lens allows one to walk, particularly up and down stairs, without difficulty.

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## BOOK NOTICES.

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Atlas of the External Diseases of the Eye, By Prof. Dr. O. Haab, of Zurich. Authorized translation from the German. Edited by G. E. de Schweinitz, A. M. M. D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia, etc. Illustrated. Phila.: W. B. Saunders, 1899. [Price, \$3.00 net.]

It is a most gratifying surprise to find that the art of lithography as applied to medicine can produce the beautiful and life-like illustrations to be found in this book. The representations of the iris deserve especial mention as the best that have appeared in medical literature. No wonder the publishers announce that when they took the contract to sell 100,000 of these atlases they

thought they were entering upon a large undertaking, but that they find their sales likely to reach double that number.

The Anatomy of the Central Nervous System of Man and of Vertebrates in General, By Prof. Ludwig Edinger, M. D., Frankfort-on-the-Main. Translated from the fifth German edition by Winfield S. Hall, Ph. D., M. D., professor of Physiology in the Northwestern University Medical School, Chicago, assisted by Philo Leon Holland, M. D., instructor in Clinical Neurology in the Northwestern University Medical School, Chicago, and Edward P. Carlton, B. S., demonstrator of Histologic Neurology in the Northwestern University Medical School, Chicago. Illustrated. Phila., New York, Chicago: The F. A. Davis Company. 1899. [Price, \$3.00.]

Medical men in the Northwest have always had a particular interest in this book because the earlier translation was made by two of their number, Drs. Riggs and Vittum, of St. Paul. The subject is one of the highest importance to all physicians, but it is to be feared that few except specialists in nervous diseases give it the study it deserves.

Beginning with the fundamental conception, the ganglion cell and nerve, the author goes on to the study of the embryology of the vertebrate brain, a study in which comparative anatomy is made a principal part. He then takes up the special anatomy of the mammalian brain, particularly that of man.

By the use of comparative anatomy, much help is gained in the presentation of a difficult subject, the differences in the development of the organs of the brain in different animals being made use of in the way of practical demonstration. It is a great subject and admirably presented in this work.

Practical Materia Medica for Nurses, by Emily A. M. Stoney, graduate of the Training School for Nurses, Lawrence, Mass., etc. Philadelphia: W. B. Saunders, 1899. [Price, \$1.50 net.]

A great many useful practical hints are given to the nurse in this book, along with some knowledge she would need only if she were intending to practice medicine. It is almost unavoidable that a work of this kind should occasionally overstep the boundary that divides the nurse from the physician, and this one is quite as free from this defect as could be expected. The advice, what to do in cases of poisoning and other emergencies, is excellent, and the book is one that no nurse should be without.

The Pathology and Treatment of Sexual Impotence. By Victor G. Vecki, M. D., Phila.: W. B. Saunders, 1899. [Price, \$2.00, net.]

No fault can be found with the manner in which the author handles a subject which is often treated of in such a way as to gratify prurient tastes. Every physician of experience meets with cases of impotence, and they are often so difficult to handle and such a source of distress to the sufferers as to more than justify the writing of books which, like this of Dr. Vecki's, are of real assistance in the understanding and management of this troublesome class of cases.

## MISCELLANY.

### INFANTICIDE.

Mode of conducting an examination in a suspected case of infanticide.

1. External.—A careful external inspection of the body of the child is first to be made. Note feet), the presence or absence of putrefaction, wounds, bruises, injuries, stains, etc. Take the color, sex, length (measured from vertex to dimensions of the thorax, shoulders and head; also ascertain the weight and the center of the body, and note the condition of the umbilical cord.

2. Internal.—Observe the shape and condition of the thorax; the lungs, as to their position, volume, shape and color; their absolute and specific weight; the position of the diaphragm; the condition of the heart as to the foramen ovale and ductus arteriosus; also the ductus venosus and the umbilical vessels. In the abdomen observe the stomach and the intestines, the liver and bladder. Also notice the brain and spinal marrow.

The Autopsy.—The first incision should be made commencing at the center of the lower jaw, and extending to the lower end of the sternum. Some advise to divide the lower jaw at the symphysis, so as the more completely to expose the buccal cavity, in search for foreign substances; this, however, may not be necessary. The position and appearance of the tongue are to be specially noticed. The larynx and trachea are next to be laid open, and as much of the œsophagus as can now be seen.

The incision is now to be carried down on each side of the spine of the ilia, and the triangular portion of the integuments thus shaped out is to be turned back so as to examine the condition of the umbilical vessels. The abdomen is next to be opened, and the position of the diaphragm noticed.

All the viscera are to be carefully inspected, together with the ductus venosus, behind the liver. The stomach and bowels are to be tied and removed in order to search for poison, if suspected. The gall bladder and urinary bladder should be examined; also the presence or absence of meconium in the large intestines be ascertained.

The thorax should be opened with the scissors, preferably to the knife, at the junction of the costal cartilages. After examining the general appearance of the contents, all the great vessels are to be tied, and divided beyond the ligatures; the trachea is also to be divided at its root. The lungs are then to be taken out and weighed, and subjected to the hydrostatic test.

The heart may now be examined as to the condition of the foramen ovale and ductus arteriosus. The head may be examined by making one incision from the root of the nose back to the neck, and another at right angles from ear to ear; strong scissors should be used in cutting through the bones. The brain is to be removed and inspected in the usual manner. The spinal cord will often require examination, and sometimes also the vertebræ.

The other two questions pertaining to the infant, in a case of child-murder, have reference to its age and the interval elapsed since its death. The age of the new-born child is to be determined by ascertaining if it exhibited the recognized character of a fully matured *fœtus*.

The exact interval of time that has elapsed since its death can not be determined merely by medical inspection. Many circumstances would have to be considered, such as the season of the year, temperature, the place where the body was discovered, etc., before the examiner could venture an opinion and he should always be extremely cautious in the matter, seeing how uncertain are the signs upon which the opinion is to be founded.—Reese.

### REVISION OF THE PHARMACOPŒIA.

To all whom it may concern:

In accordance with instructions given by resolutions passed at the National Convention for Revision of the Pharmacopœia of the United States of America, held in Washington, A. D., 1890, I herewith give notice that a General Convention for the Revision of the Pharmacopœia of the United States of America will be held in the city of Washington, D. C., beginning on the first Wednesday in May, 1900. It is requested that the several bodies represented in the Conventions of 1880 and 1890, and also such other incorporated State Medical and Pharmaceutical Associations, and incorporated Colleges of Medicine and Pharmacy, as shall have been in continuous operation for at least five years immediately preceding this notice, shall each elect delegates, not exceeding three in number; and that the Surgeon General of the Army, the Surgeon General of the Navy, and the Surgeon General of the Marine Hospital Service shall appoint, each, not exceeding three medical officers to attend the aforesaid convention.

It is desired that the several Medical and Pharmaceutical bodies, and the Medical Depart-

ments of the Army, Navy and Marine Hospital Service shall transmit to me the names and residences of their respective delegates, so soon as said delegates shall have been appointed, so that a list of the delegates to the convention may be published in accordance with the resolutions passed at the 1890 Convention for the Revision of the Pharmacopœia, in the newspapers and medical journals in the month of March, 1900.

Finally, it is further requested that the several Medical and Pharmaceutical Bodies concerned, as well as the Medical Departments of the Army, Navy and Marine Hospital Service, shall submit the present Pharmacopœia to a careful revision, and that their delegates shall transmit the result of their labors to Dr. Frederick A. Castle, 51 West 58th Street, New York City, Secretary of the Committee of Revision and Publication of the U. S. Pharmacopœia, at least three months before May 2, 1900, the date fixed for the meeting of the Convention.

H. C. WOOD.

President of the National Convention for Revising the U. S. Pharmacopœia, held in Washington, D. C., A. D., 1890.

University of Pennsylvania, Philadelphia, Pa., May 1, 1899.

#### MEAT POISONING.

The Medical and Surgical Bulletin, of Nashville, gives an abstract of a paper published in the British Medical Journal, by Dr. Herbert E. Durham, of Cambridge, England, in which the author insists upon the point that these outbreaks are really due to infection by living bacilli, and just as cholera and typhoid fever result from infection with probably virulent cholera or typhoid bacilli contained in the water or food swallowed, so eating meat contaminated by certain bacilli may infect the host with these micro-organisms and produce the symptoms seen in "meat poisoning." The symptoms are not produced by the organisms of ordinary putrefaction, the offending meat being usually of good appearance, smell and consistence. The special microbe concerned with these outbreaks is Gartner's bacillus enteritidis or bacilli allied to it, and this is found in the tissues and organs of the body.

During the investigation of a recent outbreak at Oldham, following the ingestion of veal pies, Dr. Durham found the bacillus enteritidis and corroborated the observations of others as to the serum reactions of these patient. He found that the serum of these patients possessed clumping properties upon the different varieties of the bacillus enteritidis even when diluted to one to one hundred, and in some instances to one to two hundred. Normal serum has no such effect even when diluted only one to twenty.

In the epidemic referred to fifty-four persons became ill as a result of eating the pies; four of

these died. Other batches of pies made from the same animal produced no ill effects, and it was shown that the offending pies had been improperly heated in cooking and then had not been eaten till forty-eight hours had elapsed.

Dr. Durham concludes that, though the bacilli are destroyed by exposure to 70° C. for one minute, those in the centre of the pies were not subjected to a temperature high enough to kill them. This bacillus has been isolated from the cow and the calf especially, but also from the loose pig and goat; and Theobald Smith insists on the similarity between the hog cholera bacillus and the bacillus enteritidis. Gaffky has demonstrated the possibility of communication of the disease from the cow to man through the milk, but this mode of infection is probably rare.

The author concludes his paper by urging the thorough inspection of all animals used for food and the heating of the flesh during cooking at such a temperature and for such a length of time as will ensure the destruction of any micro-organism present.

#### MICROSCOPE STOLEN.

A liberal reward will be paid for information ensuring the return of microscopic stand and objectives stolen from my house April 14.

Stand was "first class," made by Grunow, of New York. Black base, with brass above stage. Was fitted with Abbe condenser and double nose piece, carrying "first class" objectives, by Grunow, 2-3x1-6 inch, the latter adjustable.

There was stolen at the same time a 1-10 homo immersion objective, by Grunow, in box, and a 1-12 homo immersion objective, by Bausch & Lomb.

If any of the profession have either seen or purchased these instruments, they will confer a favor on me by stating facts and helping capture a thief who is an unusually clever and bold sneak thief.

J. Clark Stewart.

1628 Fifth Avenue South, Minneapolis.

#### PUERPERAL INSANITY.

Dr. J. A. Reagan (Charlotte Medical Journal, March, '99), states that in the treatment of puerperal insanity simple and rational means should guide the physician. Any defect in any of the organs should be regulated, and the patient should be taken from her home as soon as possible, and her mind directed to strange surroundings and people. It must be remembered that from the beginning the general health is below normal. Owing to the loss of sleep the nervous system is impaired, and the digestive powers much weakened, and therefore the most easily digestible food should be given. Iron and strychnine are also advisable in most cases. As



it is difficult at times to induce the patient to take medicine, they fail to obtain the proper amount of sleep. Different patients require different hypnotics. Some bear chloral hydrate well, while it has no effect on others. In Dr. Reagan's opinion, the majority of patients are more easily affected and sleep better from fifteen to thirty grains of trional, repeated in three or four hours if necessary, than from other hypnotics. No force should be used, as good judgment will easily accomplish more than the latter. It is also important to wean the child, and use means to dry up the milk as speedily as possible.

## NOTES.

### Leucorrhœa and Its Treatment.

By ROBT. C. KENNER, A. M., M. D., Louisville, Ky.

Keating's definition of leucorrhœa is that it is a discharge of excessive secretion, non-hemorrhagic in character, coming from any portion of the mucous surface of the female organs of generation. This definition, very general in its nature, is as satisfactory as we could expect to find in a few words. A description of the different varieties of leucorrhœa will only afford us a proper view of the nature of the affection.

Leucorrhœa, while aggravated by and dependent for continual existence upon systemic dyscrasias of different characters, is in the greatest number of instances purely local in its essential nature. There are cases which seems to be dependent upon causes affecting the general health, and while it is not denied that the low standard of health of the patient has much to do with the development and continuance of leucorrhœa, yet we are firmly convinced that some influence acting as an irritant to the mucous membrane brought about the initial lesion.

The following forms of leucorrhœa are those most commonly recognized by the best observers:

**Leucorrhœa of the Vulva.**—This form is seen to affect the vulva per se, and does not extend to the mucous surfaces of the vagina. It is attended with a viscid secretion which collects upon the labia majora, which glues the lips together at the margin.

This form is seen most generally in young children and has for its cause intestinal and seat worms, irritation by clothing, filthiness, masturbation, gonorrhœa and other causes.

This form, quite common in young children, is often very important from a legal standpoint. Its presence often gives rise to the belief that children have been assaulted.

**Vaginal Leucorrhœa.**—This form of leucorrhœa is not infrequently seen in single as well as married women. The discharge is of an opaque white character, often resembling curdled

milk. It is very acid and contains denuded epithelial cells. This form varies in severity from that of a mild inflammation that is but trivial in its character to one where the surface of the vagina is denuded of the epithelium. Often the discharge is entirely purulent. This form is also associated in some instances with cervical leucorrhœa.

**Cervical Leucorrhœa.**—By general consent of authors the most prevalent form of leucorrhœa is the cervical. It is the affection most commonly encountered by the general practitioner. The discharge in these cases is a glairy, tenacious mucous, which often is strikingly like the white of an egg. It is very adherent and is generally very alkaline in reaction. Under the microscope it will be found to contain a number of epithelial cells. In many cases the cervix on being touched with an instrument readily bleeds. This form is due to injuries during labor, or those sustained while abortion is being performed. Excessive coition and masturbation also are causative agencies. Coincident with pregnancy this form of leucorrhœa very often develops.

**Intra Uterine Leucorrhœa.**—This form of leucorrhœa is generally met in young women who have narrowness of the orifices of the canal, and those who have suffered with endometritis. Women who have passed the menopause also are occasionally met with who have this form of leucorrhœa. The discharge is very glairy, but very often it is purulent and even contains blood.

This form is rarely met with, and it requires the most constant and painstaking care on the part of the physician who takes charge of the patient.

Having given in general outlines the various expressions of this affection, let us now inquire into the most successful methods of treatment.

The treatment to be successful must necessarily comprehend two needs: First, the general systemic condition, and second, the local inflammation. Attention to both conditions and rational treatment will bring about results that will be of a satisfactory character.

Here let me say that while constitutional treatment is of great importance, we will fail to get satisfactory results unless due attention is paid to the local inflammation. In fact, we shall often find that well directed local treatment will be all that is required to bring about a cure. Many symptoms supposed to be due to constitutional dyscrasia will disappear when local treatment of a correct character is applied. This is what we might expect when we remember what a drain on the constitution is sustained by many cases of leucorrhœa.

In the treatment of leucorrhœa it is very important to search out whatever constitutional

trouble there may be present. If anaemia is present we will gain much headway by correcting this with proper treatment. The same can be said of any constitutional disease or condition. Scrofula, syphilis, chronic bronchitis, phthisis and other conditions which lower the vital stamina will have to be corrected before the patient can begin to regain her former health. But we must not forget that local treatment must commence with and go along with whatever constitutional measure we may see fit to institute.

These patients should be directed not to engage in fatiguing occupations, or where they have to do a great deal of lifting or where they have to stand up a great deal.

The employment of injections have been depended upon for a long time, but the profession is now against them. Of the articles employed the sulphate of zinc, tannic acid, carbolic acid and other drugs have been employed.

Many injections of solutions of these drugs have been employed, and in some cases they have done good, but the experience of the profession is now that the same and even greater good can be accomplished by other more certain means. Injections are not made correctly, and do not reach the surface affected often, and many times failure is due to this cause. Again they very often cause irritation and do harm by enhancing the diseased conditions present.

Besides giving the needed constitution treatment, what local treatment is best? We answer that Unguentine applied to the inflamed surface directly has given the best results. I have treated a great many cases with this as the local treatment with great success. I apply Unguentine, which has been diluted one-half with vasoline, on ordinary clean cotton (non-absorbent) and apply this directly to the diseased surface. This is done once or twice daily as the discharge may or may not be profuse. Its application is not attended with pain; it is soothing, however, and the results of the treatment has been in every way more rational and consequently more satisfactory than by other means.

Annie: age 22 years, married and the mother of one child, has been suffering from leucorrhœa for a year. I could account for this only on the ground that her cervix had been inflamed by an attempt that she had made to produce an abortion on herself. This patient was anæmic and complained greatly of weakness. She had a very profuse discharge which often contained considerable pus. She was given treatment for anæmia and Unguentine diluted one-half its bulk with vasoline was applied to clean, non-absorbent cotton and put in position so that the diseased surface should be covered with the remedy. For the first week this was applied twice daily, but after that time the discharge was less and she employed the remedy less often.

Improvement in this case was constant after the first week and the patient made a complete recovery, being under treatment only about six weeks. She is now, after a year, well and has had no recurrence of her affection.

Corinne J., aged 3. The mother of this child kept a boarding house and feared that the little daughter had been mistreated by some one. She was found to suffer from seat worms. This patient's labii would be closed almost with the discharge that poured out from them. The seat worms were given a quietus in the proper treatment and Unguentine diluted with half vasoline was applied over all tangible parts of the vulva. After this treatment had been employed one week the little patient had entirely recovered.

Mrs. G., age 33, had been a sufferer for a long time with leucorrhœa, which was of the vaginal variety, and which was very profuse and purulent in character. This woman had some anæmia and her appetite was indifferent. Appropriate treatment remedied this condition and application of Unguentine diluted every other day as the conditions seemed to warrant, brought about a complete recovery in five weeks. This patient has had no recurrence of the attack after eight months. Her strength is good and she is in good spirits and in every way the picture of vigorous health.

I will close this article with these briefly given clinical histories, the space at my disposal being too limited for further histories. We may add, however, that this treatment so largely employed in Louisville, is bringing such good results that it will gain further extension by the profession, who are generally quick to cast off old time and unsatisfactory methods for modern and scientific measures.

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#### Mr. F. M. Crolius.

We are sure that many of our readers will be glad to know that Mr. F. M. Crolius, who recently retired from the Minneapolis firm of Crolius, Tucker & Allen Co., has engaged in a line of business for which he is especially fitted, and in which he can be of great benefit to the physicians of the Northwest.

Mr. Crolius has opened offices in the New York Life Building, Minneapolis, to devote himself to the specialty of truss fitting, in which he has become by long experience probably the most expert man in the Northwest, and we believe he is so considered by physicians, the most competent to judge. Mr. Crolius' strict integrity and honorable business methods particularly commend him to physicians, for in sending a patient to him they may feel assured that no extravagant charges will be made.

Mr. Crolius will also deal in surgical specialties, electrical apparatus, elastic hosiery, and orthopaedic appliances.

## ORIGINAL ARTICLES.

## PURE DRINKING WATER.\*

BY TOMUS THAMS, M. D.,

Fargo, N. D.

This country of the Northwest where we live is strictly a new country as a living place of man. Twenty-five years ago very few people lived here aside from the Indians, and those who have lived here twenty years are old settlers. Consequently we do not yet know the influence of the natural conditions of the country on the race of white men. As yet we only know some of the effects on individuals who now live here, but who have before lived under other and quite different natural conditions.

The natural conditions of the country which will influence the health of the population will be the altitude, air, temperature, moisture, soil and water.

In this paper I wish to consider the quality and some of the effects of the water available for drinking purposes. The water supply of a locality is determined by the geographical and geological formation of the country.

As we have here decidedly an inland climate, the rainfall is light. The surface is level, or nearly so, so-called rolling prairie. Therefore, the water supply is derived either from shallow, slow streams, sloughs and stagnant lakes, or from wells, which are of two kinds, shallow wells fed by surface water, and artesian wells that are independent of the surface supply.

As we all know, this whole country has ages ago been submerged into the ocean. Hence the soil is everywhere more or less saturated with deposits of mineral matter which was at one time dissolved in the water, but from time to time, through evaporation, became deposited in the soil. As a consequence of this our water supply today contains larger amounts of organic matter and mineral salts.

But besides the inorganic matter which naturally exists in our water we have as far as concerns surface water of all kinds, water from shallow wells included, also to remember the organic matter of different kinds which contaminates the water from people and domestic animals on the farms and in the homes.

On the farms the water often is obtained from low places in the neighborhood of the barn or the privy, from which, of course, contamination easily takes place, or wells are sunk in the stables

or too close to the privy or in the bank of a slough or stream where in the wet season the overflow water runs directly into the well. In using the well almost always part of the water pumped up is spilled, flows over the more or less defective cover at the top of the well and runs directly back into the well and washes with it surface dirt of all kinds, which next time is pumped up again and used.

In the cities contamination of the well water is, of course, worse than in the country. On each lot are dug two holes more or less close together. In one hole is thrown feces, urine, offal and rotteness of all kinds, from the other hole a watery solution of all these ingredients is pumped up and used for drinking, the preparation of food, cleaning of the house, etc.

Another source of contamination of the wells of the towns comes from the unspeakably filthy and dangerous habit of using manure to fill up low places, grade streets, etc. Right here in my own town, considered the largest in the state, thousands of loads of manure—with all the accidental admixtures of the dung-hills from old rubber shoes to dead cats, is used in this way each year. A little dirt is thrown on top and we are safe just as the rabbit is safe from the dogs when he has concealed his ears.

This habit which even in the smallest towns never should for a moment be tolerated, is in the large cities nothing less than criminal negligence.

There is no doubt great danger in using water like this for drink and food, even if not contaminated with the bacteria of disease. But the greatest danger, of course, is that this kind of water furnishes an ideal breeding-ground for specific bacilli, in this country particularly of typhoid fever. Some of the larger towns use, besides well water, river water furnished through water works. But it is exceedingly doubtful if this is better than the well water. All our rivers are sluggish, dirty streams, and the custom of building the farmhouse along the river with barns and privies on the river bank makes this water very dangerous, not to mention direct poisoning by sewerage.

I have here only lightly touched upon the opportunities for and danger of contamination of our drinking water by organic substances, not because I deem it of slight importance but because to go into details on this side of the question would take too much time away from what I here particularly wish to consider, namely: the contamination of our water by mineral substances.

As is well known, natural water always contains a certain amount of solids which varies very

\*Read before the North Dakota Medical Society, May 24, 1899.

much in different localities. Professor Ladd has kindly furnished me with the following facts:

"In looking at the matter of waters I find that the average for seventeen leading cities in the United States and Europe is about eight grains (7.99) per gallon of solids for the water used. Taking some of the average analyses of these solids we find as follows:

	Grains per Gallon.
Calcium carbonate, Ca(CHCO <sub>3</sub> )	4.150
Calcium bicarbonate, Ca(CHCO <sub>3</sub> )	4.150
Magnesium bicarbonate, Mg(CHCO <sub>3</sub> )	1.540
Sodium sulphate Na <sub>2</sub> SO <sub>4</sub>	0.225
Sodium chloride NaCl	0.445
Sodium bicarbonate NaHCO <sub>3</sub>	0.640
Iron carbonate	Traces
	8.000

This means 177 parts of solids to 1,000,000 parts of water.

How does this compare with the water used in this state for drinking purposes?

Professor Ladd has kindly furnished me the following table:

SURFACE WELLS.

Place	Parts of solids for 1,000,000 parts of water.
Arvilla	3,992
Hunter	496
Fargo	692
Fargo	866
Fargo	1,052
Argusville	1,604
Gardner	522
Williston	1,244
Sharon	3,476
Rush River	954
Kenmare	1,346
Crosier	490
Oakes	442

ARTESIAN WELLS.

Place	Parts of solids for 1,000,000 parts of water.
Fargo	809
Jamestown	1,300
Abercrombie	1,158
Hunter	2,311
Amenia	2,768
Hillsboro	2,900
Edgely	5,182

It will be seen that there is no great difference between surface and artesian well water. Both are overloaded with mineral salts, some more, some less, but the limits are about the same for both.

It will be seen that in the most favorable places our drinking water contains four times more solids than "normal" drinking water. From that it rises up to twenty times more than "nor-

mal." It follows that with the exception of a few people who use either imported spring water, distilled water or rain water for drinking and cooking purposes, the great majority of the people of North Dakota introduce into their systems through the water an excessive amount of mineral salts of different kinds.

As this excess of salts has to be received, absorbed and excreted again from the body, the effects will naturally show themselves in the stomach, intestines and kidneys. As large amounts of the salts are carbonates they will be transformed in the stomach into chlorides by the hydrochloric acid of the stomach, the stronger acid driving the weaker out. This means a diminution of the free hydrochloric acid of the stomach available for digestive purposes. The constant excess of mineral matter in the liquid to be absorbed by the small intestine will naturally cause first an irritation of the villi and afterwards a corresponding relaxation and torpidity.

After the mineral matter is absorbed into the system it must of course again be eliminated and as this is done through the kidneys it stands to reason that most kidneys in this country are overworked.

I have for the last two or three years, as a matter of routine, examined the urine of every patient who has come to my office.

The result seems to me startling. The specific gravity varies between 1022 and 1034. The large majority have a specific gravity of between 1026 and 1030. A specific gravity of below 1018 is very rare. If a low specific gravity is met with I have in every instance been able to ascertain that the patient has shortly before examination been drinking a glass of beer. The reaction is in a large percentage of all cases alkaline or neutral.

As it might be said that all the persons examined have been sick in one way or another and that this would influence the result of the examination, I have asked my colleague, Dr. Henning, of Fargo, who probably alone does as much examination for life insurance as most of the other doctors of the city together, about his experience in regard to specific gravity and reaction, and he informs me that the usual specific gravity is between 1022 and 1024, quite a few as high as 1026 and some as high as 1030, very few below 1018. Reaction often alkaline or neutral.

There is good reason to believe that there is some connection between the frequent alkaline reaction observed and the alkaline water used, although other factors here have to be considered. We know that a diet of much meat will produce a more acid urine, while a diet of much vegetable matter and milk will produce a more alkaline or neutral urine.

But there is, I think, no doubt that the large excess of mineral salts in our water is directly the

cause of the high specific gravity of the urine. This means that the kidneys of every man, woman and child in this country are constantly overtaxed. This is a most dangerous condition and calls for radical measures from the medical fraternity.

It is remarkable that the constant secretion through the kidneys of large amounts of mineral salts does not frequently lead to stone in the kidneys and bladder, but in my experience stone is an exceedingly rare thing in North Dakota.

If I now should try to draw a picture of a patient who came to the doctor suffering from the result of the use of our alkaline drinking water, it would look something like this: dull headache, coated tongue, poor appetite, feeling of soreness in cardia, gas, sometimes diarrhoea, but as a rule constipation, dull pain in the small of back, sometimes burning when passing water, poor sleep, tiredness.

It looks quite a little like the urine acid diathesis and I believe is often mistaken for that. But examination of the urine shows no uric acid. I believe it will be admitted that this complex of symptoms is quite frequent. If it is possible to furnish such a patient absolutely good drinking water, little medicine will be needed besides regulating his diet and keeping the bowels open.

The object before us then is to furnish the people drinking water free from this obnoxious surplus of mineral matter, and it appears that the use of distilled water and rain water is the only practical solution of the question.

As to the use of distilled water we are confronted with severe difficulties.

The price of a still is quite an item. It runs from ten to twenty dollars for an average family. Another drawback is that the stills do not produce much water, consequently are expensive to run. But the most serious objection to using distilled water is the charge lately made that it is dangerous to use because it acts as a poison on the living cell. This can be directly demonstrated by experiments and the explanation is that absolutely pure water has a very strong affinity for mineral salts and withdraws them from the cell and thereby kills it.

The details of this question I refer to an article by Dr. Koppe in *Deutsche Medicinische Wochenschrift* and reproduced in the *American Druggist*. Dr. Koppe supports his theory by a very interesting array of facts.

To obviate this difficulty I have had prepared tablets which I here show you. Each tablet contains five and three-fourths grains of solids, and is sufficient for one gallon distilled water. The chemical composition is as follows: sodium sulphate one-fourth grain; sodium chlorate, one-half grain; sodium carbonate, three-fourths grain; magnesium carbonate, one grain; calcium bicarbonate, three and three-quarters grains.

This corresponds to 130 parts of solids to 1,000,000 parts of water.

In regard to stills, I will say that I have for some time at my hospital used one here exhibited, which is constructed by Prof. Bailey, of the North Dakota Agricultural College. It is simple, convenient and will under ordinary circumstances produce from two to three gallons of distilled water in twenty-four hours. As it can be run most of the time on the back part of the stove, the running expense is nominal.

To use rain water it is necessary to gather and keep it in cisterns.

### GONORRHOEA IN WOMEN.\*

By W. H. BODENSTAB,

New Salem, N. D.

Gonorrhœa is a specific infectious disease, characterized by a discharge of purulent infectious matter from the urethra of males, and from the urethra and vagina of females.

The term "gonorrhœa" has been erroneously applied, and like many others which have been retained in medical terminology, is based upon a misconception. It is derived from the Greek words "gonos"—semen and "rein"—to flow, and signifies a flow of semen. Among the German and French writers the term "blenorhœa" is frequently used, denoting a flow of mucus, from "blenos"—mucus, and "rein"—to flow and is more expressive of the true state of affairs, especially in the chronic stage. A still more accurate term would be found in "pyorrhœa," a discharge of pus. However, all these terms are inaccurate, for they do not indicate where the discharge is to be found, since there are many tissues capable of secreting pus or mucus.

The term "gonorrhœa" is quite old, and can be found in the writings of Hippocrates and Herodotus, who probably considered it a disease of the vessels which are designed for the excretion of semen, and not of the genital organs proper. Gonorrhœa has been described by many other writers, but only as it occurred in males. By some, however, who studied the disease in women, it was observed that those who suffered from gonorrhœa experienced gnawing pains in the sexual organs, with a desire for coitus, while these conditions were not present in the male. This fact shows undoubtedly that gonorrhœa in women has been confounded by ancient writers with leucorrhœa or disorders of menstruation. The contagiousness of the disease was clearly recognized, whether in males or females, as were also condylomata, which are so often found in gonorrhœa of women. Galen and Hippocrates both described them, and the latter advised their

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destruction with knife or caustic. A Chinese manuscript written by the emperor Hoang-ty in the year 2637 B. C., is said to contain the most ancient description of gonorrhœa. In this document gonorrhœa is described as "an inflammation of the urethra and vagina and of the bladder which is accompanied by a white or red discharge. The symptoms in the female are similar to those in the male, namely, pruritus ani, heat and swelling of the vagina, burning pain on micturition if the urethra is involved, a discharge of green or yellow pus and pain extending from the hypogastrium to the perineum." This description is fairly satisfactory, so much so in fact, that one is inclined to be somewhat skeptical as to the authenticity of the record.

Syphilis and leprosy are frequently mentioned in the Bible as having been common among the Israelites, but authorities differ as to whether gonorrhœa existed at that time. Josephus, a Jewish writer, who was born 37 years after Christ, states that the Israelites contracted venereal disease from the Moabites while on their journey through the Wilderness to Canaan. Moses, in the fifteenth chapter of Leviticus, speaks of the uncleanness of men in their issue, which made the Israelites possessing it ceremonially unfit, and this has been interpreted by some writers as signifying gonorrhœa. Considering many other facts in connection with the history of the nations of antiquity, we must come to the conclusion that venereal diseases were found as frequently with them as they are with us, and I think one can safely say that gonorrhœa was one of them. It has been proven that venereal disease is frequently found among some savage and barbarous people where the restraints upon the appetites and passions are entirely absent. It is, however, extremely difficult to obtain accurate information regarding the condition of these women owing to the fact that gonorrhœa cannot be diagnosed without questioning or without an examination of the genital organs, but it is easily ascertained that syphilis is common among them, for that is evident without interrogation.

Gonorrhœa being a specific disease, it must of necessity be due to a specific cause. This point has caused a good deal of experimenting and found a good many men arguing the specificity of the disease. Through Ricord's authority the fact has been established that gonorrhœa is a disease entirely distinct from syphilis. Ricord's teachings brought about a controversy as to whether gonorrhœa was merely a catarrhal affection or a specific disease possessing contagious properties. The adherents of the catarrhal view claimed that only through its irritative action and not through its contagious qualities gonorrhœal pus produces the disease when brought into contact with healthy mucous membranes. In support of this belief instances of gonorrhœa

were cited which had developed in the male through contact with leucorrhœal or menstrual discharges, as well as after a number of mechanical irritative causes. Ricord's opponents on the other hand maintained that the secretion of a mucous membrane, which did not contain the contagion of gonorrhœa, could never cause gonorrhœa. They demonstrated this fact by introducing a bougie, covered with pus from abscesses and other sources, into the healthy urethra, without producing a true gonorrhœa; they also proved that cohabitation with women at the time of menstruation or with those suffering from leucorrhœa, does not necessarily cause an inflammation of the urethra. These men gradually gained ground in the profession, and before long were diligently at work trying to find the specific cause of the disease.

In 1837 the innocent "Aricomonas vaginalis," an inhabitant of the healthy vagina, was claimed to be the cause; and again in 1868 Salisbury accused the thread-like germs, the "crypta gonorrhœica," which he found in the pus of gonorrhœa, and Hollier, also in 1872, claimed as a cause for gonorrhœa the "konotecium gonorrhœicum."

These discoveries marked a new era in the study of gonorrhœa, and were prophesies of the revolution which was soon to take place in the investigation of infectious diseases. The new science of bacteriology was beginning to assume definite proportions.

Another important chapter in the evolution of our present knowledge of gonorrhœa, especially in the female, was furnished by Noeggerath. In 1872 appeared his first paper on "Latent Gonorrhœa in Woman," and in 1876 his second one on "Latent Gonorrhœa, Especially with Regard to Its Influence on Fertility in Woman." He claimed that gonorrhœa remained latent, and that newly married women were often infected by their husbands who had long since considered themselves free from the disease, and that sterility, dysmenorrhœa, perimetritis, salpingitis and ovaritis resulted. He found an immense number of gynæcological maladies resulting from gonorrhœa, and from this fact he deduced consequences which were naturally astonishing, so much so that gynæcologists in general opposed his theory. Nevertheless they seem to become more and more convinced that his views were correct to a very great extent, and that gonorrhœal disease in women must be considered as a much more serious matter than was at first supposed.

In 1879 Neisser, of Breslau, finally put an end to many fruitless discussions when he announced the discovery of the gonococcus, a microbe, which he claimed was characteristic of gonorrhœa. He asserts its constant presence in gonor-

rheal pus and its identity with a microbe found in the pus of ophthalmia neonatorum, and its usual presence in groups upon pus corpuscles or upon epithelial cells. He also stated that it differed morphologically and functionally from all other forms of micrococci. The investigations of Neisser were soon supplemented by those of many others, who confirmed the statements which he had made.

The gonococcus is a relatively large micro-organism, measuring about 1 m m in length and a half m m in breadth, occupying, as Neisser has stated, the pus or epithelial cells, but may also be found lying singly between them, but never in the nucleus of the cell. The single coccus is kidney-shaped, or has somewhat the appearance of a coffee bean. They occur usually in pairs, lying close together with their flattened surfaces looking towards each other, and resemble in shape a baker's roll. They usually lie in groups, which at times so completely fill the cell that the latter seems to have ruptured, allowing the cocci to escape.

To discover the presence of gonococci staining methods must be employed, and this is readily accomplished by means of the aniline dyes such as fuchsine, methyl and gentian violet, methyl blue, or by the aid of Gram's method which is mainly used to differentiate. Gonococci are decolorized by it in contradistinction to all other cocci.

An easy and quick way of staining is the following: A small drop of pus or secretion is spread in a very thin film on a cover glass or slide, with the aid of a platinum wire or loop. It is allowed to dry in the air. The specimen is then passed three times rather slowly through the flame of an alcohol lamp or Bunsen burner, with the right side turned upward. Then the specimen is covered with the staining fluid and allowed to remain there for one or two minutes, after which time it is washed off with a jet of water and examined either in water or after thoroughly drying it, in Canada balsam.

The gonococcus can be raised on culture media, the most efficient of which is a mixture of human blood serum and peptone-agar. The most favorable temperature is 36 degrees centigrade. At a temperature of 39 degrees centigrade the colonies become quite few in number and die in twenty-four hours. The gonococci in dry pus are dead, but on dissolving this pus in warm water and staining it on a glass slide as before described they can still be found, a fact which is very important in hygiene and from a medico-legal standpoint. Clothing and linen are consequently virulent only as long as they have not dried. Their growth is usually superficial and by preference on mucous membranes covered by cylindrical or transitional epithelium, but they may grow down deeper into connective tissue

and between muscle fibres, and may also attack mucous membranes covered by flat epithelium. They are the cause of most cases of salpingitis. They may produce genuine abscesses, such as ovarian and periurethral. They may be conveyed by the blood current and cause inflammation in distant parts, most commonly arthritis, also endocarditis, pericarditis, pleuritis and myocarditis, and last but not least synovitis or gonorrhœal rheumatism. Infection by gonococci does not cause pain and annoyance in women to the same extent as in men, but the disease in its extension and sequelæ is farther reaching and more dangerous. Gonorrhœa is usually imparted by immediate contact during coiture. Mediate contagion may result possibly from bathing water, towels, garments, etc.; to this contagion women are more liable than men, and to it is almost always attributed the disease in female infants, where the disease of the genitals is sometimes derived from gonorrhœal ophthalmia. Immediate contagion is generally imparted in the case of infants by the genital tract of the mother, and only very rarely by criminal practices.

The gonococci may primarily attack the vulva, vagina and uterus or the urethra, and may spread secondarily to the bladder and kidneys on one hand and to the Fallopian tubes and the ovaries on the other. It is extremely difficult to decide in which of these localities the infectious inflammation is most frequently found; perhaps the first in order of frequency is as in man the urethra, next is the mucus membrane of the cervix, then the uterus and finally the Fallopian tubes. Authorities differ as to whether a specific vaginitis occurs in adults, although it is frequently found in children. Though there has been strong opposition to the idea of the existence of primary gonorrhœal vaginitis, that opposition is becoming less pronounced. The principal objections that have been offered are that the gonococcus does not live upon the pavement epithelium of the vagina, nor in the secretion of the vagina which is normally acid; and yet the objectors to vaginal gonorrhœa admit its presence and frequency in children and in young women.

Regarding the frequency of gonorrhœa in women, no definite conclusions have been reached. Noeggerath claimed that eighty per cent of all women are affected with gonorrhœa, while Sanger found a percentage of 12 in 1,930 women. In neither of these estimates is there any distinction drawn between prostitutes and reputable women—an important distinction to be regarded in any computation of the frequency of the disease, inasmuch as the majority of cases of gonorrhœa, acute or chronic, are found in prostitutes; any percentage which includes them would be misleading in so far as it relates to the spread of the disease, and calculations in

that respect must be based upon the number of reputable women infected. For many reasons this number is extremely difficult to compute; the disease even in its acute stage may be attributed by the patient to a cause no more serious than a cold or a strain, or to an irregularity in the catamenia; no physician is consulted, and all treatment neglected. Such cases are probably numerous, and of them no record can be made. Cases which do come under observation usually arise from infection from husbands, who are themselves suffering from gonorrhœa or from chronic urethritis, the result of an imperfectly cured attack of gonorrhœa of long standing.

An acute attack of the disease in woman is caused by infection with the abundant secretion of a more or less recently acquired gonorrhœa in man. The vulva and vestibulum are covered with a thick, creamy, yellow pus which emerges from the vagina in large quantities when the labia are separated. These parts are swollen and markedly reddened and tender to the touch. The patient experiences itching and a feeling of voluptuousness, which soon changes to pain, becoming more severe on touch or when the patient is walking. Urination also becomes painful, and the urine coming in contact with the inflamed surface causes burning and smarting. The pus generally produces erosions of the mucous membrane and of the adjoining skin, the inner side of the thigh and the anal furrow. These latter conditions aggravate the pain and cause a slight rise of temperature and sometimes swelling of the inguinal glands.

Having introduced a finger into the vagina and drawing it from behind forward along the anterior wall, thus pressing the urethra against the symphysis pubis, a drop of pus can usually be squeezed out of the urethra. This symptom is very characteristic, but is not apparent soon after urination. The urine may become turbid, neutral or alkaline in reaction, and possesses a pungent, ammoniacal odor; urination is more frequent, every fifteen or twenty minutes, and is accompanied by violent vesical tenesmus. These latter are all symptoms of cystitis. The mucous membrane of the vagina is relaxed, swollen and red, and the columns are more marked. The epithelium is exfoliated in large masses, the papillæ are swollen and appear as nodules the size of millet seeds on the summits of the folds and over the whole extent of the vagina. At first they are rather pale in color, and situate on a dark red surface, but they soon become brown or cherry red, then black from extravasation of blood, and may bleed somewhat when the tender epithelial covering is removed by the examining finger or the speculum. When the condition becomes chronic, the symptoms are modified, the papillary swelling and the unevenness of the surface are less marked.

During the acute attack inflammation of the glands of Bartholini is frequently found, usually ending in suppuration. These glands correspond to Cowper's glands in the male, and are situated in the lower third of the labia majora, one on each side of the vaginal entrance. Bartholin's is as a rule unilateral, but it is important to note that in some persons, especially prostitutes, it has a tendency to recur, and in these cases the inflammation is found alternately to attack both glands.

In acute Bartholinitis the periglandular tissue is invariably involved, and is apparent by the œdematous swelling and tenderness of the lower half of the greater lip.

In chronic Bartholinitis the condition is entirely different; the gland is not swollen and there is no pain, the gland duct being the seat of the lesion. This is filled with pus which can be expressed by slight pressure. A very reliable and important sign of chronic Bartholinitis is a dark purple discoloration of the edges of the mouth of the gland duct.

Another complication of gonorrhœa is found in the acuminate condylomata. These arise from a multiplication of papillæ, ranging in size from a millet seed to that of a walnut. They are always pedunculated, and are found upon all parts of the vulva from the perineum to above the mons veneris, over the thighs and upon the abdomen.

The cervical mucous membrane is infected quite early; it is swollen and red and prolapses, as it were, into the external os. The discharge is very profuse, greenish yellow in appearance and of a tenacious nature, constituting a gonorrhœal cervical endometritis, and extending as far as the internal os, where the acute process is temporarily arrested.

The infection caused by a latent gonorrhœa in man (*goutte militaire* of the French and *Nachtripper des Mannes* of the Germans) consisting of a short stricture of the membranous portion of the urethra and being evident by the secretion of a drop of muco-pus, especially in the morning, and known as the "morning drop," presents an entirely different form of the disease. The symptoms appear gradually and are at first very mild; no attention is paid to the discharge, and the burning on urination until the inflammatory process extends to the endometrium proper, whence the acute and the latent forms run the same course. The inflammation of the endometrium causes irregularities in the catamenia such as dysmenorrhœa, amenorrhœa, menorrhagia; in fact all pathological forms may be alternately represented. At the same time there is a feeling of weight and fullness in the pelvis due to the inflammatory hyperæmia of the uterus, which is accompanied later by a direct uterine pain. This pain may be due also to an



inflammation of the tubes, as the migration of the cocci from the uterus into the tubes is quite rapid. At this juncture the process may again be arrested and the latent form of gonorrhœa brought to a standstill, as was the case with the acute attack at the internal os. The discharge is now more abundant and purulent. If the inflammatory process does not extend into the peritoneum, but remains localized to the tube owing to an agglutination of its fimbriated end or of the isthmus, the result will be a closed, dilated sack containing pus, a pyosalpinx, which invariably produces sterility, both tubes usually being affected.

The peritoneum may be infected in one of two ways, either through the wall of the tube, that is, through the lymph channels, or by means of its abdominal opening, thus causing very painful, circumscribed forms of peritonitis in and around Douglas' cul de sac. There is usually moderate fever and a formation of sero-fibrinous exudation in Douglas' pouch. This exudation later is reabsorbed and forms adhesions between the serous surfaces of the various pelvic organs, causing the many different displacements of the uterus and its adnexa.

The diagnosis of gonorrhœa is as a rule not difficult. We have burning on micturition, possibly cystitis and Bartholinitis, the former being evident by the turbid, alkaline urine, ammoniacal odor, triple phosphates, micrococci, mucus, pus and blood corpuscles; the latter by the extreme tenderness, redness, swelling and eventually fluctuation at the lower half of the labium major; discharge of pus from the vagina and the fact that this pus has its origin in the cervix; purulent discharge from the urethra; tenderness of the uterus and its adnexa; irregularities in menstruation, sterility, and last, the finding of gonococci in the discharge by one of the methods mentioned above.

The treatment of acute gonorrhœa is very simple, and the first requisite is thorough cleanliness of the parts. In vulvitis they are bathed and perfectly dried and some dusting powder applied. A little medicated cotton is insinuated between the parts to prevent contact with the adjoining skin. If the symptoms are very severe, the patient is kept in bed for several days, during which time applications of lead water and laudanum are made, until the acute inflammatory symptoms subside. Urethritis in women is much easier to treat than in men owing to the short urethra. In hospital practice it is advisable to use injections or the swab. For this purpose, a solution of corrosive sublimate 1-5000 can be used, also permanganate of potash 1-2000. The best results are obtained, however, from the silver preparations in the following strengths, several times daily: Nitrate of silver in one or two per cent. solutions; argonine in five to ten per cent.

solutions, and protargol in one-half to one per cent. solutions. In private practice where the patient is unable to report once or twice daily, and the irrigations cannot be used, we must content ourselves with local baths and cooling applications, and it will be found that fortunately the mucous membrane returns to its normal state in the majority of cases. If cystitis develops, the bladder must be irrigated with salicylic acid, 1-300 to 1-200, permanganate of potash, 1-5000 to 1-1000, or nitrate of silver, 1-300.

Acute Bartholinitis requires poultices, and as soon as fluctuation is apparent an incision should be made, the wound being irrigated and packed with iodoform gauze. In chronic Bartholinitis local treatment is often of no avail and relief can only be found by splitting the gland duct and applying a caustic or by excision of the entire gland.

Condylomata are cut away with the knife or scissors, or cauterized with a twenty-five per cent solution of chromic acid.

After vaginal injections have been used for several weeks, we begin to look after the treatment of the uterus, which differs in no way from that of endometritis and metritis as given in our text books on gynæcology. We must, however, remember always to make a bimanual examination in order to exclude disease of the adnexa, as every attempt at intrauterine treatment is answered by an exacerbation on the part of these organs. In case they are affected, we must direct our attention to them before treating the uterus.

Noeggerath's prediction, that time would prove the truth of his statement concerning the destructive influence of this disease upon the reproductive power, has been practically verified. The relation of gonorrhœa to sterility was one of the important features in his original article. Sterility is the result in all cases where the disease extends into the Fallopian tubes, excites an inflammatory action in them and seals their abdominal ends. In such cases it is irremediable; a more or less complete cure of the inflammatory process is possible, but a restoration of the tube ad integrum is impossible.

#### OBSERVATIONS IN ANÆSTHESIA.\*

BY ALICE MAGAW,

Anæsthetist to St. Mary' Hospital of Rochester, Minn.

During the past six years I have acted as anæsthetist in the service of Drs. Mayo, at St. Mary's Hospital. In a general way the anæsthesia has been conducted under the direction of Dr. A. W. Stinchfield, or, in his absence, by Dr.

\*Read before the Olmsted County Medical Society, May 2, 1899.

Christopher Graham, and our results in over three thousand cases have been so favorable that it encourages me to write this paper.

In presenting it I do not expect to bring out many new or important theories, as I do not feel that we have yet advanced sufficiently in anæsthetics to do so; still at the same time we are willing to show the changes in our ideas concerning various and improved methods in anæsthetizing agents.

Having been educated only as a nurse I am not expected to make the choice of an anæsthetic. The Drs. Mayo prefer ether, as the anæsthetic of choice; they, as well as many other surgeons, believe ether to be safer. Chloroform is given as a rule to old people and children, also when there is pulmonary trouble and in most cases where there is kidney disease. Whenever there is high arterial tension from any cause chloroform is selected. Ether should be given as an anæsthetic pure and simple and not combined with asphyxia, as has been recommended and is now practiced in many hospitals, the so-called "choking or smothering method." If given with plenty of air there will not be the cyanosis and stertorous breathing which too often characterizes its use.

We find that women pass more readily into the stage of anæsthetic sleep than do men, and think the sleep is more profound. The emotions of patients should be observed, as excitement and fear often overpower the heart to such a degree as to make a great difference between safety and danger. A few words of encouragement will often be of great service in quieting the heart and improving the circulation. Even with children there should always be a certain amount of explanation, so that they will not think the means to get them asleep are violent.

The day before the operation the patient is examined thoroughly, first by the surgeon, then by one of the physicians, when all the conditions are noted as regards heart, lungs and kidneys.

Operations are almost always in the morning, and no food is allowed, excepting in feeble cases a small cup of coffee at least six hours before the operation. One or two ounces of castor oil are given the day previous and a warm bath the same night.

During the six years in the work I do not suppose I have anæsthetized a half dozen patients outside the operating room. In some way or other, the surgeon, nurses and anæsthetizer gain the confidence of the patients and they soon take a notion to walk into the room, or if unable, are wheeled in and mount the table. They are allowed to look around, see all they can and questions are answered as well as possible. Seeing for themselves seems to do away with a great deal of fear.

The face is annointed with vaseline, a thick pad of moistened cotton placed over the eyes, and the anæsthetic preferred by the surgeon commenced.

The inhaler we use at present and have for some time is the Esmarch mask with two thicknesses of stockinette. We sent to the mills and had a bolt of stockinette woven loosely for this purpose; it has more body than the regular surgeon's gauze. We usually put two thicknesses of the gauze over the mask and get both ether and chloroform ready, and give whichever is best for the conditions observed.

If we start out to give ether we commence with the drop method as carefully and with as much air as though it were chloroform, until the patient's face is flushed, when we have a large piece of surgeon's gauze of several thicknesses and about the size of a towel convenient, and keep adding a few more layers of the gauze and giving the ether a trifle faster until the patient is asleep, then remove the gauze and continue with the same covering as at the start and the drop method. I find that I can get alcoholics or any other class of patients under in this manner as a rule.

If when giving ether it should produce difficult breathing, profuse secretion of mucus, or cough, change to chloroform and your mask is ready, except that it is saturated with ether and one should wait until the ether is evaporated or the patient is coming out from ether anæsthesia and then proceed with the chloroform, by the drop method, very slowly and carefully. We find that in making this change from ether to chloroform or the reverse is where the greatest of precaution should be used. On a visit to St. Mary's Hospital, Dr. Archibald MacLaren called our attention to the fact that if a patient could not take one anæsthetic well he could most always take the other, and observation on my part has verified this fact.

We think the method we now use in giving ether the best we have ever tried. Ether was given for several years with Wyeth's modification of the Ormsby inhaler, but we noticed in the use of this cone that it was not clean, neither did the patients get the proper amount of air, and a number of cases of bronchitis of varying severity followed the use of it, until we finally fell into the use of the Esmarch mask and drop method introduced in the Augustana Hospital by Dr. L. H. Prince in the service of Dr. Ochsner. We tried it thoroughly, that is, using the chloroform in all cases unless there was some contraindication, until the patient was unconscious and then the two together, not mixed but dropped from separate bottles until anæsthesia was produced; but objections arose as it seemed that the danger from chloroform came just with the beginning of

the anæsthesia, and ether is the anæsthetic of choice in the hospital and is used for the majority of the cases.

Ether should never be given carelessly; lift the mask from the face occasionally when the patient is fully under, and allow several breaths of fresh air, and in returning the mask with a fresh dose replace it slowly and gradually to prevent choking, change in respiration, etc. A commendable improvement in giving ether with a great deal of air is that we do not find the extreme nausea we used to have following anæsthesia, neither do we have the bronchitis to contend with. One should change the gauze in the Esmarch after each patient, or put in fresh gauze any time very quickly should vomiting occur.

While the general effects of chloroform are very much like those of ether there are some marked differences. Chloroform should be given with more air, in less quantity and with the regular drop, as advocated by Dr. J. E. Moore. It should be given slowly and carefully, and as it acts very quickly the greatest of caution should be used. The pulse should be watched very carefully in either anæsthetic, but too much care in every detail can not be taken in chloroform. It does not produce nausea as a rule as does ether, and it is not so unpleasant, but when we do get chloroform nausea it will often last for days and it is almost impossible to give any relief. Too much cannot be said for the drop method in giving chloroform, it seems to be the safest way that has ever been introduced.

The great secret of giving an anæsthetic of any kind is not to feel hurried and to have the operator say occasionally, "there is no hurry, lots of time." There is such a difference in patients; some will be as calm and fall asleep as easily and quickly as babes, while others are nervous and can not give up and when you try to crowd the anæsthetic you are lost. Nothing is ever made by crowding the anæsthetic; I have tried it; rather than crowd ether it is best to give a few drops of chloroform. The surgeon should not hurry the anæsthetist, neither should he begin the operation until the patient and anæsthetizer are ready. While it is not necessary for the anæsthetist to watch the operation, he should know how the operation is progressing so as to be able to stop the anæsthetic.

It is a rule of ours not to keep a patient under an anæsthetic a minute longer than is absolutely necessary to do work well, and this is one reason why the patients are not anæsthetized outside the operating room.

The surgeon can never tell just what complications may arise; he means to be through at a certain time, but should he fail, the succeeding patient will be inhaling the anæsthetic much longer than is necessary. We find that we lose little time in giving the anæsthetic in the operat-

ing room, for as a rule, when the patient is fully ready the anæsthetic has taken its effect.

Oftentimes the patient is out from under the anæsthetic when the dressings are put on, and can help himself a good deal and is allowed to do so.

In our alcoholic cases and in operations on the stomach, we find that from one-eighth to one-fourth of a grain of morphine one-half hour before the operation carries them through better and with less anæsthetic. In some operations of this character, after giving the morphine and a little ether until the incision is made the patient has been wide awake and talking to those about him and almost free from any pain, more ether being given to close the abdominal incision.

When dangerous symptoms arise, either during the administration of an anæsthetic or after, a good many factors are often responsible; the anæsthetic, the work of the surgeon and the condition of the patient. Often when the patient is nearly under the anæsthetic he will stop breathing or seem to have a sort of spasm; instead of crowding the anæsthetic remove the mask and give several breaths of air and then proceed, and the patient will usually be all right.

I have rarely had occasion to use a gag or tongue forceps since giving ether with more air, in fact, I think we have not had to resort to either once in three hundred cases. As a rule, if the anæsthetist is careful and slow, all that is needed is to raise the lower jaw up and forward and the patient's respiration will be as regular as when asleep, and instead of using the tongue forceps catch the tongue with a towel or a clean piece of gauze and draw it up toward the nose and a little to one side and you have the desired effect.

The eyes give very early warning of danger. Some insist that the state of the pupils, the pulse, or change in respiration are sure indications of danger, but to rely upon any one of these signs would be folly; carefully watch all of these symptoms, not relying on any one of them. Usually the surgeon will give warning of the color of the blood, which is also very important.

Often when the heart is acting badly under ether it may behave beautifully under chloroform. I think the eyes and respiration are the things I notice more particularly, then the color of the skin. I often remove the mask and note the general symptoms, and if I am not satisfied with the general appearance of the patient give more air and less anæsthetic and improvement is noticeable at once. In children we almost always give chloroform, as they usually take it easily, but I never feel safe when a child is profoundly under chloroform and try to avoid it. I try to keep them as near as possible in moderate anæsthesia.

Sometimes the pulse may mislead an inex-

perienced anæsthetizer; it may become weak just before vomiting, when one would think there was need of less anæsthetic; but it really calls for more.

Every patient will not have a satisfactory pulse, and no alarm need be felt at a low tension, because a certain amount of pallor and a slow, weak pulse are not always danger signals. Usually it more anæsthetic be given the pulse becomes slow and feeble, if less, it becomes faster and stronger.

In six years' work with over thirty-five hundred cases, we feel that we have been extremely fortunate, having never lost a case directly from the anæsthetic. True we have had our little scares, but seldom have had to resort to more than stopping the anæsthetic, raising the jaw up and forward and sometimes traction of the tongue quite vigorously, about as frequent as normal respiration. We use very few drugs during or after anæsthesia, for as a rule all the patient needs is more air and the anæsthetic withdrawn entirely.

As regards the dose of either ether or chloroform one cannot say, as the amount of either anæsthetic will vary in different cases, just as some persons will need twice as much alcohol or morphine. Some alcoholics will drink and drink again before becoming intoxicated, while others are inebriated from the smallest amount. In case of accident due to anæsthesia, the first object of the attendant usually is to renew respiration on the part of the patient and the efforts should be prompt and continued as long as there is hope.

The first thing in case of syncope is to invert the patient, the head lowered as far as possible, traction of the tongue quite vigorously, stretching the sphincter ani, and placing a towel wet in hot water over the region of the heart, etc.

In summing up this paper the following conclusions are made: That the simple Esmarch mask is superior to any other inhaler now in use.

That the ether is to be given with more air than was formerly supposed.

That patients revive quickly with plenty of air and withdrawal of the anæsthetic.

That the main thing in giving an anæsthetic is not to feel hurried and not to crowd either ether or chloroform.

Avoid the frequent use of gags and tongue forceps.

Not to rely on any one danger signal, but carefully watch all symptoms.

The subject of anæsthesia is an important as well as an inexhaustible one and as yet the best of us know but little about it. As Dr. Robert Phelps has wisely said: "In giving an anæsthetic remember that you are, as it were, carrying the patient along the edge of the precipice, and while there is no need of going over you must watch not to get too near the edge."

## WHAT ARE THE RESPECTIVE INDICATIONS FOR THE ANTERIOR ABDOMINAL AND VAGINAL INCISIONS FOR PELVIC DISEASE.\*

By A. W. ABBOTT, M. D.,

Minneapolis.

The reasons that a surgeon can give for not fully adhering to opinions previously held, are entitled to some consideration, because they represent the unbiased expression of his added experience. The recent enthusiasm over vaginal operations has not been altogether sterile. While we have learned that a few things can be best done by the vagina, we have also learned, what is of greater importance, that most operations upon and about the pelvic organs can be better done by a generous exposure of the pelvic contents, through a free anterior abdominal incision.

Certain conditions naturally place themselves outside of this discussion. We refer (1st) to all tumors of pelvic origin, of whatsoever kind, that have grown so large as to extend above a line uniting the two anterior superior spines of the ilium.

(2d) Abscesses of pelvic origin that show a distinct inclination to point toward the anterior abdominal wall, and which are not accessible by the vagina.

(3d) All tubercular pelvic diseases, because of the greater probability of a high peritoneal infection.

(4th) Cases complicated by appendicitis, intestinal obstruction, or any other condition which of itself would demand the anterior abdominal incision.

(5th) Extrauterine pregnancy after the third month.

These conditions for well known and appreciated reasons should always be operated upon through an anterior abdominal incision.

This still leaves us quite a list of pelvic diseases, cases of which have been operated upon with fair success by each method:

1. Pus tubes and tubo-ovarian abscess.
2. Abscess of the true pelvis, and recent exudates.
3. Malignant disease of the uterus or ovaries.
4. Small tumors of the ovaries or uterus.
5. Extrauterine pregnancy.
6. Retro-displacement of the uterus, with adhesions.
7. Uterine prolapse.
8. Abscess within the broad ligament.
9. Hæmatocele not due to ectopic gestation.
10. Partially diseased and adherent tubes and ovaries in women of child-bearing age.

\*Read before the Minnesota Academy of Medicine, May 3 1899.

## PUS TUBES AND TUBO-OVARIAN ABSCESS.

If it could be positively stated from a preliminary examination that a given tube or ovary, or both, were diseased beyond repair, a clean enucleation by the anterior abdominal route would be the universally approved operation, but vaginal drainage in these cases has taught us that some of them so diagnosed and so treated, not only apparently get well, but some even have borne children afterward. In some highly septic cases with great exhaustion of the patient, drainage affords prompt temporary relief, giving the patient a respite from absorption and pain, and a corresponding increase in strength. The serous inflammatory cysts which often surround purulent foci, and primary exudates, may also be treated in the same way, with like advantage.

It has been stated by eminent authority that the vaginal drainage of these cases leaves the adhesions firmer and more numerous, thus interfering with subsequent operations. We can see no reason for this, nor have we found it true, in actual practice.

The writer has observed, however, that pus foci may remain for months after the patient is symptomatically cured, sometimes with and sometimes without a minute sinus following the track of the original drainage. Another disadvantage is the tendency to contracture, with retro-displacement, after posterior drainage, and sometimes a good deal of vesical irritation after an anterior vaginal incision.

We may conclude, therefore, that in salpingitis with pus, or in tubo-ovarian abscess, the anterior abdominal incision should be adopted, if it is tolerably certain that a clean operation can be so made. If there is much doubt, the pus may be drained by a posterior vaginal incision, always regarding the latter more in the light of a preliminary effort to put the patient in a good operative condition, than as a final curative procedure. The patient may honestly be told, however, that the vaginal drainage, in some cases, does result in a perfect cure.

Posterior vaginal incision and drainage is especially adapted in abscess of the true pelvis, or the exudate of early inflammation. It is very near nature's way of cure, but usually more rapid. These are some of the very few conditions where vaginal drainage is in every way preferable to the anterior abdominal incision. The uninfected portion of the peritoneum is not invaded, the convalescence is quick, and the favorable result generally permanent.

Of malignant disease of the uterus or ovaries, it can hardly be said that, except under the most favorable circumstances, either method is very satisfactory. A preliminary vaginal incision up to but not including the uterine arteries, followed at the same sitting by a free abdominal incision, will afford the best opportunity for a clean, thor-

ough enucleation of the diseased parts. There have been so many early returns after the removal of the uterus, when the disease was supposed to be in its incipiency, and where the enucleation has included all accessible pelvic glands, that the outlook, with all the methods of operating for malignant disease, is still far from promising. Malignant disease, confined to the ovary, and operated upon by the abdominal incision, has furnished the greater percentage of permanent cures.

It seems like a most brilliant surgical success to remove a small ovarian cyst or uterine subserous myoma through a vaginal incision, and have the patient up and about in ten days. With a capacious and dilatable vagina, a certainty of no serious complications like dense adhesions, inflammatory foci, etc., it is, without question, a most satisfactory procedure, but with a narrow vagina and the probability of complications, the writer must admit, after a considerable experience, that it is, to him, anything but good, clean surgery.

A sub-mucous myoma, not larger than a goose-egg, in a movable uterus, with a dilatable cervical canal, should be removed per vaginam. In a high, fixed uterus, with a rigid cervical wall, such a tumor can be more safely removed by an anterior abdominal incision, with a hysterectomy or enucleation; for, if attempted by the vagina, the uterus must be split before and behind, clear to the fundus, and the field of operation is contracted and out of reach.

Small myomata of the anterior uterine wall may be very conveniently removed per vaginam, after a free separation of the bladder from the uterus.

Extrauterine pregnancy should always be operated upon by the abdominal route, before and after rupture, and without reference to the duration of gestation. After a trial of both methods, before and after rupture, and in the periods from the second to the fourth month, the writer would make only one exception to the above rule, and that is, where sepsis has followed rupture. Here the danger of hemorrhage is eliminated, the condition is like a simple pelvic abscess, and the vagina is the safer route.

In retro-displacements of the uterus, with adhesions, if a ventro-suspension is contemplated, the one incision will, of course, do for both the separation of the adhesions and the suspension. If the broad ligaments are to be shortened, the adhesions may be broken through after an abdominal or vaginal incision. If the adhesions have resulted from a gonorrhoeal infection, the adhesions are likely to be more dense, and there will be quite a certainty that the tubes are seriously involved. In such a case, an anterior opening of the abdominal wall will give a better chance to deal with the probable complication.

On the other hand, if the adhesions have followed abortion or puerperal sepsis, they are likely to be more web-like, easily separated, and there is less likelihood of tubal disease. In such cases, a vaginal opening, to break up the adhesions, makes a very satisfactory preliminary to the Alexander's operation.

The above remarks on the differentiation of pelvic adhesions are not founded on exact data or bacteriological examination but on clinical observation alone. It is quite likely, therefore, that the writer may be in some measure mistaken.

Vaginal hysterectomy, abdominal hysterectomy, ventro-suspension, Alexander's operation, and taking up the utero-sacral ligaments by the vagina or abdomen, have all been used for uterine prolapse. Ventro-suspension and vaginal hysterectomy seem to be the choice of the profession, the former during the child-bearing period, the latter, after.

Abscess within the broad ligament points either towards the cervix, or upward above Poupert's ligament. The nearest accessible point should determine the site of the operation.

Pelvic hæmatocele, not due to ectopic gestation, but to trauma or bleeding from tubes or ovaries, may be left to absorption, if the hemorrhage is not increasing or the clot does not become septic. If the bleeding is persistent, the anterior abdominal route should undoubtedly be chosen, as the work must be rapid and complete. If sepsis has developed, the clot should be cleaned out through a free vaginal opening. A very free drainage is required in these cases, and the writer would call attention to the necessity of making a vertical incision, in addition to the cross cut usually adopted. The blood pressure is so great in some cases that the peritoneum is pushed down beyond Douglas' sac, dissecting the rectal from the vaginal wall, and making a pouch which tends, if simply incised laterally, to close itself like a valve. If, however, the cross cut is changed to a "T" shape, by a vertical extension, the drainage will be abundant. All danger of opening the rectum may be avoided by cutting upon the finger, hooked into the pouch.

In cases permitting of conservative work on the tubes and ovaries, the abdominal incision should always be chosen, because the vaginal route is too cramped and the view too obstructed for a finished operation.

In conclusion, we may say that while many of the conditions that have been selected in this paper for the anterior abdominal incision have been repeatedly operated upon by the vagina, and exceptional cases make it advisable to choose that route, yet it may be stated that it is the experience of those who especially have been advocates of the vaginal method in all possible cases, that its domain should be limited, first, to true pelvic abscess, or those conditions which are

practically the same, i. e., recent exudates, or hemorrhages becoming septic; second, the breaking up of adhesions of the lighter grades; third, opening of abscesses of the broad ligament when pointing towards the cervix; and, fourth, the removal of small intrauterine or other pelvic tumors, when the capacity of the vagina is fully adequate for a thorough technique.

21 S. Tenth St.

Technique of High Rectal Injections in Infants.—Dr. W. P. Northrup, of New York, reporting in the Record the cure of a case of intussusception in an infant nine months old, describes his method of procedure as follows:

The method of procedure was as usual: water 108° F.; elevation three feet; soft-rubber catheter; a roller bandage; chloroform (complete relaxation). As to the quantity of water; for some other purpose the doctor had hung up in the bath-room a three-gallon glass percolator from which led a large rubber tube, terminating at its lower end in a soft-rubber catheter. These appliances were for present needs perfect. It is desirable to have an unlimited supply of water, and preferably in a transparent glass vessel. There is always plenty of leakage about a catheter in the anus, and the tests of the proper amount of water are made by feeling the abdomen as the water distends it, and watching the effect of the pressure on the action of the heart as the diaphragm crowds up against that organ.

The roller was used in the ordinary way to prevent leakage about the catheter, i. e., the pith of the roller was punched out, and the catheter pushed through so that four to five inches protruded on the distal side. The catheter having been inserted, this bandage when crowded well against the buttocks served its purpose.

The water entering the rectum did not advance in the direction of the spleen, but directly across the hypogastrium, or, to give our impressions more exactly, it seemed to dig its way about deep in the pelvis. As it advanced, too, the sausage seemed to be directly lifted up against the abdominal wall, forming a flattened bow, one end beginning in the left groin arching upward and across, below the level of the navel and disappearing in the depths of the left groin. The water next seemed to find its way rather suddenly up from the right groin toward the liver. At one moment we had, then, the firm sausage tumor arching from groin to navel and opposite groin, with a fairly full distended feeling of all the region below the navel; the next moment in addition a column putting up to the liver. The child, not being well under the anæsthetic, ejected the water with force. During this effort something happened. In a few minutes it became certain that there was no longer any trace of the "sausage," and there has not been since.

# NORTHWESTERN LANCET.

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## PURE WATER A POISON.

In a paper read before the North Dakota Medical Society and printed in another part of this issue, the writer, in the course of a discussion of the water supply of his neighborhood, speaks of distilled water as unfit for drinking purposes because it is too pure, a statement that at first sounds incredible, but is nevertheless found to be well attested by experience, by experiment and logical reasoning. In this northwestern country, where the water, even of lakes and rivers, is hard to such a degree as to be almost altogether unfit for washing purposes, and the water of wells so strongly alkaline as to be to many people decidedly purgative, it sounds strange to ring a note of alarm against the use of too pure water. None the less is it necessary.

If a section of fresh animal tissue be mounted in pure distilled water and put under the microscope it will be observed that the tissue swells and becomes cloudy. The reason for this is that by the process of osmosis part of the salts pass from the cells into the mounting fluid while the distilled water passes into the cells of the tissue and swells them. The result of this change is the rapid death of the cell. The microscopist therefore uses a normal salt solution instead of pure water for mounting purposes and so avoids the osmotic changes. When a quantity of distilled water is taken into the stomach the superficial epithelial cells are affected like those of the microscopical specimen just described, they

die and are thrown off, the irritation of the water producing an incipient stage of catarrhal gastritis.

The most available test for the relative purity of water is the electrical conductivity, which is lowest in the purest water and increases with the admixture of salts. Experiment shows that the purest water, according to this standard, is not distilled water, as might be supposed, but the water obtained from melting natural ice. According to the investigations of Koppe, whose paper on this subject in the *Deutsche Medicinische Wochenschrift* has attracted wide attention, the indices of electrical conductivity of various waters are as follows:

Water from natural ice.....	8
Water from ice made from distilled water .....	10
Gasteiner Giftbrunnen ("poison springs") .....	31.9
Ordinary distilled water.....	49.2
Water from artificial ice.....	137
Vienna, public mains.....	220 to 239
Giessen, public mains.....	296
Selterswater, natural .....	5,700
Salt solution, 0.73 per cent.....	11,050
Salt solution, 1.46 per cent.....	20,038

It will be seen from this table that water melted from natural ice is purer even than distilled water. The reason for this is that the distilled water tested has always absorbed much in the way of impurities from the still, from the vessel in which it has been kept and from the air of the room in which it has stood, often uncovered and surrounded by many volatile substances. This explains the well known fact that eating ice and snow disagrees with both men and animals; the melted snow or ice furnishes a water so pure as to be harmful to the cells of the mucous membrane of the stomach. The springs of high mountains, whose water comes from melted snow and ice of exceptional purity because its high situation prevents contamination by dust, are well known to be dangerous as drinking water and the guide books warn the mountain climber against their use. The springs mentioned in the table above as Giftbrunnen, "poison springs," whose water is of the low electrical conductivity of 31.9, have been reputed to be poisonous for many years, but repeated analysis of the water has failed to reveal the source

of the poisonous quality until this test of their purity comes along and discloses the secret.

The medical importance of a knowledge of the poisonous quality of pure water is considerable. Why ice pellets often seem to increase rather than quench the thirst is no longer a mystery. The use of distilled water for drinking purposes will need regulation and salts must be added to such water if too pure. The electrical conductivity test of the purity of water is not available for general use and no doubt a simpler one can be devised that will answer all practical purposes. The flatness and insipidity of distilled water is alone enough to make it rejected as a beverage, but when ice is taken into the mouth its coldness so benumbs the endings of the nerves of taste that insipidity is no longer noticed.

#### The North Dakota Medical Society.

The annual meeting of this society which occurred on the twenty-fourth and twenty-fifth of May was well attended, there being a good attendance from the home state of the society and many visitors from without the state beside. Of the quality of the scientific work of the meeting the readers of the *Lancet* will have a chance to judge for themselves, as an arrangement has been made by which the papers and proceedings will be published by this journal. The first instalment of the papers will be found in another part of this issue.

## REPORTS OF SOCIETIES.

#### Minnesota Academy of Medicine.

R. O. BEARD, M. D., Secretary.

Stated meeting, Wednesday evening, May 3, at the West Hotel, Minneapolis: the president, Dr. C. G. Weston, in the chair.

Dr. J. E. Moore, of Minneapolis, presented a specimen of a perforated appendix, containing a large enterolith, removed from a child of seven and a half years in the family practice of Dr. J. A. Crosby, of Minneapolis. The attack was a very recent one, of only twenty-four hours standing; was characterized by severe pain, which the child attributed to a kick received from a playmate, and there was not at any time a temperature over 102° F. An operation had been successfully performed.

Dr. F. R. Woodard showed specimens re-

moved from two cases of appendicitis. In one of these cases the attack had been sharply acute, the appendix was found to be gangrenous and several ounces of pus were removed.

Dr. A. W. Abbott, of Minneapolis, read a paper upon

#### THE INDICATIONS FOR THE CHOICE OF THE ABDOMINAL AND VAGINAL ROUTES FOR OPERATION.

See page 210.

Dr. F. A. Dunsmoor, of Minneapolis, opened the discussion. He said that the surgeon often changed his opinion as he grew in grace and the author of the paper had twice changed his upon this subject. He regarded the question of date as determining the route of operation in a case of extrauterine pregnancy as a rather unsurgical guide. He thought it was a question of condition rather than one of time. He agreed with the general statement that pus cases should be dealt with through the vagina. One ground of objection to the abdominal operation he found in the tendency to subsequent hernia. It seemed to him that, during the past year, he had seen more cases of hernia following abdominal operations than he had ever seen before. It was not necessarily true that hernia should be apparent at the time of the patient's discharge. It was often a remote accident.

He questioned whether the anterior vaginal opening should be taught. The lateral and posterior incisions were, in his judgment, always to be preferred. Many surgeons had recommended the former plan, but he did not believe it to be often practicable. Done well, an opening into the anterior vaginal field might be safe and successful, but it was certainly not to be chosen.

All would agree that solid growths should be operated upon from above. Nevertheless, large fibroids may sometimes be removed successfully per vaginam. In fixed growths, with inflammatory exudate and consequently fixed uterus, the attempt should not be made to remove through the vagina. The size, contents, adhesions of the growth, together with the past history of the patient, should determine the route of operation and not the element of time.

Dr. C. H. Hunter, of Minneapolis, suggested that in making an abdominal operation for the relief of uterine displacement, it was a good plan to shorten the round ligament from the internal rather than the external end. He referred to Dudley's method, which he had followed with profit, of folding up the internal extremity of the ligament and attaching it to the uterine wall.

Dr. J. L. Rothrock, of St. Paul, said that the vaginal route for operative work increased in its range with practice; yet he believed the method to be reserved almost entirely for operations



upon inflammatory cases. The author of the paper had referred to the policy of waiting for the formation of pus. He had seen cases in which it was impossible to say whether pus had formed or not, and in which operation had failed to discover pus, but in which incision and drainage had relieved the patient. Infection, as a rule, does not proceed along the tubes, but through the lymphatics. It was no more necessary to remove the tubes in the wall of an abscess, in many a case, than it was to dissect out the abscess wall itself. He cited cases in which he had resected and replaced the tubes in operations through the vagina. It was a question whether in cases of large and malignant growths the abdominal route for removal would not always be chosen. In these cases the route was a simple one. He emphasized the importance of early operation upon cases of pelvic inflammation with exudate; he had found relief speedily follow, with a saving of pus formation. Drainage certainly renders the soil less favorable to the development of septic conditions.

Dr. J. Warren Little, of Minneapolis, remarked that the author of the paper had certainly had as much experience as anybody else in the operation by the vaginal route and he was glad, therefore, to note his return to a choice in many of these cases of the alternative route.

Dr. J. E. Moore, of Minneapolis, expected a conservative paper from Dr. Abbott, who was one of the pioneers in the vaginal route. He had now taught us that it was not always preferable to take this route simply because it could be taken. For himself, he had always had some prejudice against the vaginal route. He much preferred wide open surgery.

Dr. Brackett, of Charles City, Iowa, who was present as a guest of the Academy, said that while his experience had not been large, he had used the vaginal route in several hysterectomies with satisfactory results. He thought it had in its favor the avoidance of shock.

Dr. Reamer, also a guest of the Academy, gave his adherence to the abdominal route, excepting in pus operations.

Dr. A. W. Abbott, in closing the discussion, returned his thanks for the tone of the discussion. Touching Dr. Rothrock's suggestions, he gave his hearty approval to his treatment of inflammatory pelvic exudates. He questioned whether there was much difference in the matter of shock by the one route or the other. Where the same extent of work was done and due caution observed with reference to exposure of the abdominal contents, he regarded it as a doubtful difference. Opinions were divided upon it and it must still be regarded as sub judice.

Upon motion the Academy adjourned.

## MISCELLANY.

### IOWA STATE MEDICAL SOCIETY.

J. W. COKENOWER, M. D., Secretary.

The forty-eighth annual session of the Iowa State Medical Society, held at Cedar Rapids, May 17, 18 and 19, 1899, was one of the most largely attended in the history of the society, there having been admitted 105 new members, with a total attendance of nearly 500. The meeting was held in Greene's Opera House, Dr. H. B. Young, president, presiding. Other officers present as follows: First vice president, Dr. James T. Priestly, Des Moines; second vice-president, Dr. David C. Brockman, Ottumwa; secretary, Dr. James W. Cokenower, Des Moines; assistant secretary, Dr. Frank S. Skinner, Marion; treasurer, Dr. Geo. R. Skinner, Cedar Rapids. Session was opened by prayer by Rev. Burkhalter, Cedar Rapids; address of welcome followed, by S. M. Redmond, Esq., mayor of Cedar Rapids, and response by Dr. J. M. Emmert, Atlantic, Iowa. Dr. H. S. Raymer, chairman of the committee on arrangements, made his report. Greetings were received and returned from the Medical Societies then in session in Pennsylvania, Illinois and Missouri. The committee on publication also made its report, which was very satisfactory. The secretary read the names selected by each congressional district to act as members of the nominating committee, as follows:

First District—C. F. Wahrer, Ft. Madison.  
 Second District—C. N. Robertson, Davenport.  
 Third District—W. Watson, Dubuque.  
 Fourth District—S. F. Cole, Oelwein.  
 Fifth District—S. M. Ristine, Cedar Rapids.  
 Sixth District—S. F. Hart, Prairie City.  
 Seventh District—L. Schooler, Des Moines.  
 Eighth District—Samuel Bailey, Mt. Ayr.  
 Ninth District—F. S. Thomas, Council Bluffs.  
 Tenth District—D. S. Thomas, Lohrville.  
 Eleventh District—VanBuren Knott, Sioux City.

Dr. Young, president of the society, delivered the address, which was replete with good advice for the society, and was a deviation from the usual form of setting forth scientific views; dwelt more particularly upon what, in his opinion, would be the best method of augmenting the membership and adding to the usefulness of the Iowa State Medical Society. As a special feature of his address, he called attention to the fact that out of a membership of nearly 3,000, the society had about 700, and one reason it was so was from the fact that it was so hard to become a member, on account of the limited number of delegates from each auxiliary society. He advised that there be a committee appointed on membership, and that any member of the regular profession, in good standing, on presenting sat-

isfactory evidence of that fact to the committee should be eligible to membership of the state society; he thought by this means the membership would be increased largely and rapidly and the usefulness of the society very much enhanced. The address was an able one, and was highly appreciated by the society.

Section work was next taken up. First section, Practice of Medicine, Dr. J. P. Cole, chairman, Oelwein, made his report, which was quite complete on the subject of clinical medicine. Papers read were as follows: "Modern Treatment of Typhoid Fever," by Dr. H. E. W. Barnes, Creston; "Serum Treatment of Diphtheria," by Dr. W. S. Devine, Marshalltown; "The Pathogenesis of Rasdow's Disease," by Dr. M. A. Minassian, Des Moines; "Influenza and its Treatment," by Dr. George E. Crawford, Cedar Rapids; "Rest as a Therapeutic Agent in the Treatment of Disease," by Dr. I. S. Bigelow, Dubuque; "The Non-Operative Treatment of Appendicitis," by Dr. T. J. Shuell, Parnell. These papers were all of a very high character and showed a great deal of research in their preparation, and advanced many modern ideas with regard to internal medicines, and each paper was followed by extended and lively discussion by the following doctors: L. Schooler, C. P. Wahrer, John Hamilton, Cedar Rapids; J. R. Herrick, Ottumwa; J. F. Clark, Fairfield; Walter F. Scott, Adel; T. J. Maxwell, B. M. Wick, Cedar Falls; Walter Riering, Iowa City; E. L. Stevens, Des Moines; L. W. Littig, Iowa City; and others.

The next section was *Materia Medica* and Therapeutics. Dr. V. L. Treyner, Council Bluffs, was chairman of this section, and made quite an elaborate report upon modern therapeutics, and the list of papers produced in this section showed that the doctor had selected men who were thoroughly alive and up to date upon the subject. The first paper was by Dr. Mary F. Finley, Council Bluffs, upon the uses of water in pædiatrics, followed by "Some Uses of Castor Oil," by Dr. F. W. Potterfield, Atlantic, and "Prescription Writing," by Dr. J. M. Bristow, Council Bluffs. These papers were entertainingly discussed by Drs. H. P. Jennings, Council Bluffs; A. W. McClure, Mt. Pleasant; D. W. Crouse, Des Moines; J. F. McCarthy, Dubuque.

The next was a sub-section, Hygiene. Dr. C. F. Wahrer, Ft. Madison, was the chairman, and made a very interesting report. I give a sentence or two of it: "Few physicians give more than their passive consent to this branch of medicine, looking upon it with keen sense of distrust of a man about to lose his job, for hygiene, as we all know, tends more to the prevention of disease than to its cure. If the ideal hygienist had his way the doctor's occupation would soon be gone, with the exception of obstetrics and emergency practice. This is somewhat illustrat-

ed by my success in getting papers for this section." "A cursory perusal of the history of medicine in connection with the history of any civilized country will conclusively show that which has been gained in controlling disease, which is a part of hygiene also, in stamping out some of the old and discovering remedies by which we can cure maladies which formerly were almost beyond control. A notable example is the anti-toxin serum for diphtheria, and yet very much is expected yet that we will learn upon this important subject." A paper was presented upon the subject "Quarantine from the Executive Standpoint," by Dr. P. C. Naumann, mayor of Burlington, and ably discussed by Drs. F. E. Sampson, Creston; J. M. Emmert, Atlantic; D. W. Finlayson, Des Moines; D. W. Crouse, Waterloo; A. J. Hobson, Hampton; R. A. Cushman, Sanborn; and J. G. Biller, Cherokee.

Dr. A. J. Hobson, chairman of the section on State Medicine, made a very interesting report, which was followed by Dr. J. C. Powers, Hampton, with a paper on "Anti-Tuberculosis." This paper was one of the most interesting presented at the meeting and did great credit to its author, and many points were contained therein that if they could be carried out, would help to stop the ravages of tuberculosis, not only in the human, but in the animal kingdom as well. This paper was interestingly discussed by Drs. J. M. Emmert, D. C. Brockman, E. S. Thomas, W. S. Bierring, J. T. Priestly and Theo. Engle.

The section of Mental and Nervous Diseases was presided over by Dr. M. N. Voldeng, of Des Moines, as chairman, who made a very exhaustive report; the doctor having special advantages upon nervous diseases, fully showed that he had given the society the benefit of his special knowledge upon this subject. The paper was highly received and followed by one on nervous diseases from the standpoint of a general practitioner, by Dr. Edward Hornibrook, Cherokee, and this by "Post-Operative Psychosis," by Dr. D. S. Fairchild, of Clinton. These papers were discussed by a number of physicians and valuable information upon the subject given to the general profession.

The next section was Surgery, of which Dr. Geo. R. Skinner, Cedar Rapids, was chairman, and his report contained modern research on the subject and was well received and followed by papers as follows: "The Prevention of Wound Infection," by Dr. C. E. Stoner, Des Moines; "A Peculiar Case of Appendicitis," by Dr. B. N. Torrey, Creston; "Gunshot Wounds," by Dr. Lewis Schooler, Des Moines; "Hemorrhage from the Palmer Arch," by Dr. H. A. Leipziger, Burlington; "Spinal Meningocele, with Report of Case," by Dr. VanBuren Knott, Sioux City; "The Relation of the Lymphatic System to the Removal of Malignant Tubercular Neoplasms," by Dr. D. W. Finlayson, Des Moines.

The papers were all well received and ably discussed by a number of members of the society and followed by the report of the nominating committee, who were compelled by the constitution and by-laws to report two names for president, of whom Dr. T. J. Maxell was elected; first vice president H. B. Criley, Dallas Center; second vice president, Dr. M. E. Crawford, Cedar Rapids; secretary, Dr. James W. Cokenower, Des Moines; assistant secretary, Dr. E. E. Dorr, Des Moines; treasurer, Dr. Geo. R. Skinner, Cedar Rapids. Chairmen of committees: Arrangements, Dr. M. N. Voldeng, Des Moines; ethics, Dr. H. R. Young, Burlington; finance, Dr. James R. Guthrie; publication, Dr. W. B. Small, Waterloo; constitution and by-laws, S. Bailey, Mt. Ayr; legislation, W. D. Middleton, Davenport; expert testimony, Dr. C. M. Hobby, Iowa City; trustees, Dr. Stephen E. Robinson, West Union; necrology, Dr. C. F. Wahrer, Ft. Madison; Rush monument fund, Dr. Edward Hornibrook, Cherokee. Seventy-two delegates were elected to the American Medical Association, at Columbus, Ohio, June 7.

Next followed the sub-section on Ophthalmology, Dr. M. F. Patterson, chairman, who made a very interesting report, and this was followed by a paper on "Granular Conjunctivitis," by Dr. W. H. Kinnier, Dubuque. Discussion by Drs. Sampson, LaForce, Beirring, Hobby, Sisson and Patterson.

Next was the sub-section, Otolaryngology, chairman, Dr. C. M. Robertson, Davenport, who handled the subject well in his report, and gave the society some interesting thoughts upon how to take care of the ears and throat, and was followed by a paper on "Brain Abscess a Complication of Suppurative Otitis Media," by Dr. C. M. Hobby, Iowa City, and "Nasal Reflexes," by Dr. Geo. Kinney, Burlington. These papers were discussed by Drs. Young, Sampson, Andrews, of Chicago, Patterson, Knott and Pearson.

Obstetrics was the next section to come before the society, Dr. J. W. Holiday, Burlington, chairman. Papers were read upon the subject of "Elective and Aseptic Obstetrics," by Dr. F. P. Dorsey, Keokuk; "Cervical Injuries in Labor," by Dr. S. A. Spilman, Ottumwa; "A Glance at Twenty-five Years of Obstetric Practice," by Dr. Rebecca Hana, Red Oak; "Puerperal Eclampsia," by Dr. J. C. Robertson, Council Bluffs. These papers were ably discussed by Drs. C. F. Wahrer, H. E. Eschbaugh, A. E. King, D. W. Crouse and others.

The sub-section of Gynecology was presided over by Dr. R. E. Conniff, Sioux City, who made a very exhaustive report, which was followed by a paper on "Endo Retritis," by Dr. W. F. Cram Sheldon; also papers on "Inflammatory Disease of the Uterine Appendages," by Dr. J. N. Wat-

ren, Sioux City; "Neuroses of the Induced Premature Climacteric," by Dr. Jennie McCowen, Davenport; and "Hysperectomy," by Dr. J. W. Guthrie, Dubuque. These papers were all of the highest character and, if time would permit, the writer would like to give not only the papers of this section, but those of all preceding, a more complete abstract; he can only say that the papers were the result of much thought and investigation upon the different subjects and that, on a whole he believes there never has been a better class of scientifically presented papers before the Iowa State Medical Society than were given this year.

The committee upon legislation recommended better care for the indigent epileptics, which are now either kept in the poor houses, insane hospitals or jails, neither of which is a proper place. They state in their report: "The men who have given the subject the most attention recommend the colonization of these unfortunates as the best method of caring for them, best for their welfare and for the interest of the state, and we recommend that the members of this society use their influence for the enactment of laws to provide proper places for their restraint, education and treatment."

The report of the treasurer and secretary show that the society is in a very healthy condition financially, with a large surplus on hand for use in getting out the printed transactions. This society last year published about 600 bound volumes of 450 pages each, and this year it is thought that it will be necessary to publish 700 volumes, which will contain about 500 pages each.

The Iowa State Medical Society meets each alternate year in Des Moines, and the other year in such other place outside as the society may vote to hold the meeting; and this year proved no error upon the part of the society to have selected Cedar Rapids as the place of meeting, the attendance being the best in the history of the society and the interest and character of the work comparing favorably with any previous meeting.

The following resolution was unanimously adopted:

"Resolved, That the State Medical Society tender its sincere thanks to the members of the profession, their wives, citizens, hotels and newspapers of Cedar Rapids for their courteous treatment."

The society adjourned to meet in Des Moines in 1900.

#### SOUTH DAKOTA MEDICAL SOCIETY.

The eighteenth annual meeting of the South Dakota Medical Society will be held at Yankton, S. D., on Thursday, June 15th, 1899. The place of meeting will be announced at the Pierce Hotel.

In this connection the following announcement is made:

"The annual meeting was appointed for only one day this year, but it has been thought best by the committee to have a clinic the following day at Sacred Heart Hospital, Yankton, where there is a very fine operating room with modern conveniences for antiseptic surgery, and ample room for any patients who might want to remain, at a rate of one dollar per day.

"We are especially anxious to have a good meeting and an interesting time and, therefore, ask the hearty co-operation of every member. Each member bring as many patients as possible, either operative or medical; he can operate himself or choose anyone he wishes. If the patient is poor and can pay only hospital expenses bring them along, as the Yankton members agree to care for them free of charge while they remain in the hospital. There are a number of interesting cases already received. Dr. J. B. Murphy, of Chicago, is expected to be present and operate.

"It seems if all members will lend their assistance it can be made a most interesting meeting. It is requested that all patients should be reported to Dr. D. W. Ridges, Yankton, assistant secretary, as soon as possible, but bring any along, even at the eleventh hour."

Program, Thursday, June 15, 8 a. m.

Address of Welcome . . . . . Mayor English  
President's Annual Address. . . . . F. A. Spafford  
Paper (subject announced). . . . . L. F. Diefendorf  
Surgery of the Bladder. . . . . A. Zetlitz  
Cerebral Localization and Brain Sur-

gery . . . . . Samuel Phelps  
Abdominal Surgery . . . . . J. B. Murphy, Chicago  
10:00 o'Clock p. m.

Typhoid Fever . . . . . A. H. Bowman  
Paper (subject announced) . . . . . Wm. Edwards  
Symphesiotomy . . . . . E. L. Brown  
Membranous Croup . . . . . C. B. Alford  
Appendicitis . . . . . T. F. Beveridge

The grand lodge of the A. F. & A. M. will meet in Yankton at the same time and arrangements have been made to join with them in securing reduced rates.

Buy a full fare ticket one way, take a receipt from the agent, and this when signed by the second assistant secretary will entitle you to return for one-fifth fare.

#### SOUTHERN MINNESOTA MEDICAL ASSOCIATION.

A circular letter reads as follows:

Dear Doctor:

I desire to remind you that the next meeting of the Southern Minnesota Medical Association which convenes at Owatonna early in August must be made one of the great successes in medical circles for the year 1899. In order to accomplish this purpose a fine array of papers must be furnished.

Will you not therefore provide a paper or report some interesting cases, and in order for me to secure the most prompt results in making up the programme, kindly drop me a postal card expressing your intentions, and then furnish me the title of your paper before the first of July.

We must make the Southern Minnesota Medical Association one of the most influential societies in the state, and to accomplish this end we must have the spontaneous hearty support of every member. Let me urge your hearty co-operation.

Yours truly,

W. T. Adams, Secretary.

#### BARRON COUNTY MEDICAL SOCIETY.

The second quarterly meeting of this society will be held at Cumberland, Wisconsin, June 6, 1899. The program follows:

##### PAPERS.

Tuesday Afternoon, 2 p. m.

- 1 Sporadic Cretinism with Illustrative Cases. . . . . Dr. I. G. Babcock
  - 2 Radical Treatment of Tubercular Lymphangitis of Neck. . . . . Dr. O. Behrens
  - 3 Trephining for Cranial Fractures. . . . .  
 . . . . . Dr. W. H. Ellis
  - 4 Acute Malignant Endocarditis. . . . .  
 . . . . . Dr. A. E. Hedback
  - 5 History of the Practice of Medicine in Barron County. . . . . Dr. W. B. Hopkins
  - 6 Fractures of the Femur. . . . . Dr. O. M. Sattre
  - 7 Presentation of Case of Spinal Sclerosis . . . . . Dr. I. G. Babcock
- Other papers are promised.

#### THE JUNE MAGAZINES.

Scribner's opens with a richly illustrated article on "The Modern Group of Scandinavian Painters," by Cecilia Waern, who discusses the most eminent men of the day, and gives samples of their work. "The Battle of the Blockhouses" tells of the fighting in the Philippines in a graphic manner, and it will interest any reader who desires to compare the work of today with that of 1861. The illustrations from photographs lend much to the graphic word-pictures of the text. Governor Roosevelt's series of most remarkable articles closes with one of the best in the series, and we lay down the magazine with regret that such a narrative must end. This series of articles will add to the fame of both the magazine and the author. The stories of the issue are of a very high order, and though this issue is devoid of articles with striking titles, it is rich in good things.

The Atlantic opens with the first chapters of "To Have and to Hold," which the editors say is a brilliant historical novel, and it certainly

gives such promise in its opening chapters. It is by Mary Johnston, with whom readers of the Atlantic are well acquainted. Frank Gaylord Cook writes of "Politics and the Judiciary," and he shows that the change from an appointive to an elective system has been an unfortunate one. His appeal for a return to the better system will not fall upon deaf ears, for the public knows all about the evils of our present system. Prince Kropotkin continues his brilliant and fascinating autobiography, and Mr. C. M. Robinson adds a third article to his series of valuable studies on "Improvement in City Life."

The *Cosmopolitan* ranks high among the best American magazines, and its enterprise is shown by its liberal offer for articles on home life in the May issue. Our readers will be particularly interested in two or three of them. One hundred and fifty dollars is offered for the best article on "Home Care of the Sick;" and two hundred dollars for the best article on "The Care of the Eye."

The complete novel in the June issue of *Lippincott's* is entitled "Green Withes," by Jeanette H. Walworth. This is a tale of strong human interest, touching, as it does, on one of the vital questions of today. The snapping of the green withes of convention and the inevitable awakening are told in a forceful and interesting way, which is calculated to arouse the reader's deepest sympathy.

A delightful article on "The Summer's Birds," by Dr. Charles C. Abbott, will be found entertaining, as well as useful in country walks this summer. "Chemistry in the Kitchen," by Albert G. Evans; "The Samoan Feast of Pīlāui," by Owen Hall; and "Fires in Metalliferous Mines," by John E. Bennett, are all excellent and timely papers.

Shorter fiction is well represented by Dora Read Goodale in "The Opera-Glass," and by Rollo Ogden in "A Scientific Reader."

Theodore Gallagher contributes a story of life in a miners' camp, called "Father McGrath," and Alice Miriam Roundy writes of "King McDougal's Kitten."

The June Ladies' Home Journal reaches the top notch of excellence in both its pictorial and literary features. It opens with a page drawing of Longfellow's *Evangeline*, and gives a group of pictures showing some "Fetes of College Girls." An interesting description is given of "The Creole Girl of New Orleans," and "House-keeping on an Ocean Steamship," is graphically portrayed. "How a Young Man Can Work His Way Through College," has a practical value for every poor boy ambitious for higher education. Bishop, priest, rabbi and minister contribute to a symposium on "What is the Good of Going to Church?"

## NOTES.

### Familiar Clinical Pictures.

One of the most common class of cases is that in which there are no well defined characteristic symptoms of organic disease, but in which there are disturbances of practically all the functions of the body. This condition is variously termed general debility, malnutrition, general atony, etc. The symptom-group is an exceedingly complex and varied one, but the most striking disturbances are those connected with the processes of metabolism; the patient is unable to replace by food the active waste occasioned by physiologic functions. In consequence of this, nutrition suffers, vital force becomes diminished and there is functional disturbance of practically all the organs of the body. The stomach and the processes of digestion become particularly enfeebled, and as a consequence there arise the symptoms of atonic dyspepsia, with lack of appetite and inability of the digestive organs to prepare the food for assimilation. The patient's vital powers are at a low ebb and nature's method of recuperation, that is, by assimilation of food, is effectively inhibited by inability of the organs to furnish the required properly prepared nourishment. Every physician has many times realized the absolute uselessness in these cases of the ordinarily employed tonics, iron, arsenic and strychnine. It is soon apparent that the remedies are either not absorbed or if they do enter the system, they fail absolutely to re-establish the proper ratio of metabolic waste and repair. It is now universally conceded by authorities that the first requisite in the treatment of this class of cases, is to foster the patient's nutritive functions so that food will become assimilated and thus restore wasted tissue and impaired vital forces. The stomach is the organ of prime importance and its normal functional activity must be re-established by remedies which have a direct tonic alterative and stimulant influence upon its enfeebled, inactive mucous membrane. Stomachics—gentian, taraxacum, phosphoric acid, etc.—are the agents of most service. When, however, these stomachics are combined in a certain manner with a remedy which, according to the highest medical authorities, is the best promoter of assimilation, the indications for treatment are completely met. Gray's Glycerine Tonic Comp. combats malnutrition upon the most rational scientific basis, that is, it re-establishes normal nutritive processes by its stimulant and alterative influence upon the digestive organs and also furnishes the wherewithal—glycerine—to cause the assimilation of food and medicines. It gives nature the needed chance to resume its normal work of repairing exhausted vitality and wasted tissue. While primarily a stomachic Gray's Glycerine Tonic Comp. is of greatest value in all

conditions of systemic depression or exhaustion occurring either independently or as a consequence of severe organic diseases, such as tuberculosis, Bright's disease, etc. It antagonizes depression by propping the natural functions of the body, by engendering appetite and ensuring the absorption and assimilation of food—nature's method of repairing waste.

#### Vin Mariani.

"Vin Mariani" is essentially the brain and nerve tonic of those who have talent and genius. These it is who compose the great army of intellectual workers, and the ravages made upon their nervous systems by the demands made upon them are at times truly appalling. This damage and consequent drain yield to nothing more quickly than to "Vin Mariani." The most noted European physicians, literateurs, musicians, singers, artists and diplomats have sent the most flattering letters to M. Mariani extolling his product. Not only these but crowned heads as well have been mentally invigorated and rejuvenated by "Vin Mariani" and never tire of speaking words in its praise. It must be acknowledged that unsolicited testimonials, couched in such glowing terms, from such sources, are the best evidence possible that can be offered for the merits of the preparation. When "Vin Mariani" becomes as well known in this country as it is in Europe it will be adopted as one of the indispensable remedies in the household.—The St. Louis Medical and Surgical Journal, May, 1899.

#### Testimony Worth Considering.

The sheet anchor in the treatment of hypertrophic rhinitis is cleanliness and free drainage.

At the last meeting of the American Medical Association, a widely known rhinologist and laryngologist said: "The profession out of reach of the specialist can do more for the relief of patients suffering with chronic inflammatory conditions of the nasal cavities with Glyco-Thymoline (Kress) and the Birmingham douche than any one preparation I know of."

This coming from so eminent an authority is worth repeating, and after a thorough trial of the preparation, I feel justified in indorsing his statement, and believe it to be worthy of this short notice.—Geo. H. Stubbs, M. D., in The Alabama Medical and Surgical Age for March, 1898.

#### Successful Treatment of a Wound.

Sample of Ecthol was received and at time of receiving, had good case to use it. Miss —, had misfortune to run hedge thorn one inch long in leg, above ankle. It remained in one week, when she was brought to office to have it extracted. Was successful in removing thorn, but it being a dead one pieces of bark remained in

wound. Disinfected wound with bi-chloride, bound it up and sent patient home. Was summoned in two days and found limb inflamed to groin, swollen and very painful. Removed bandage, which was followed by small quantity of pus. Reapplied dressing. That night bottle of Ecthol was received, visited patient next day, and put her on Ecthol, a teaspoonful six times a day, and injected medicine in the wound, and applied cloth saturated with same. In four days pain, swelling and inflammation gone, wound healing and patient able to do her work.

A. L. Stiers, M. D.

Dawson, Neb., Nov. 25th, 1898.

#### Analytical Test.

I have used Neurosine, prepared by the Dios Chemical Co. of St. Louis, in my practice for a number of years in hundreds of cases where the Bromides are indicated, with marked success. The preparation has always been uniform, and is in my opinion the best combination of Bromides on the market. On request I have made a chemical analysis of this preparation and can state conscientiously that it is entirely free of opium, morphine and chloral.

Carl Orth, Ph. G. M. D.,

Analytical Chemist.

1437 Penrose St.

#### Utro-Ovarian Pain.

Prompt relief, unaccompanied by habit or untoward after-effect, is what the up-to-date practitioner desires most in these cases. If the pain is over the lower border of the liver, or lower part of the stomach or in short, be it headache, sideache, backache or pain of any other description caused by suppressed or irregular menstruation, it will yield to two five grain tablets of Antikamnia. This dose may be repeated in an hour or two, if needed. For very prompt relief, it is advisable to crush the tablets and swallow them with a little wine, diluted whisky or toddy.—Ohio Medical Journal.

#### Sanmetto in General Naso-Pharyngeal and Bronchial Catarrh, Etc.

I have used Sanmetto in my own case, i. e. general naso-pharyngeal and bronchial catarrh with the invariable complication in all such cases, gastro-intestinal catarrh, with the very best results, and I frequently prescribe it in such cases with the most satisfactory results. I use it in all cases of hypertrophy of the prostate, dysuria, difficult and painful micturition, and such as need to have the genital tract braced up, with the very best results.

J. B. Duncan, M. D.

Bedford, Ind.

## ORIGINAL ARTICLES.

## HERNIA.\*

BY A. McLAREN, M. D.,

St. Paul.

Hernia is rather too broad a field to cover in one short paper, so I have decided to principally confine my remarks to strangulated hernia.

When strangulation does not exist, we have time and to spare to study our case, to look up our authorities, and consult our friends and the instrument maker, and to decide whether this individual case can be best treated with a truss, depending upon the patient's work, habits and age, or whether it will be better for him to undergo the slight danger of a radical operation, and give him a chance of doing away with the discomfort of a truss and becoming again a sound man. But when strangulation suddenly makes its appearance the entire picture is changed, and the physician must be quick to act and fearless to advise if he would save his patient. The mortality of strangulated hernia is a matter which is hard to determine, for, as in all other departments of surgery, it is the successful cases which are sure to be reported. We are none of us fond of putting our failures on record, our friends and neighbors are pretty sure to do that. Again, the men who are the most apt to write and report their cases are the professors and hospital surgeons who perhaps are more expert, but who operate under every advantage of room, light and assistants, and who probably get the best class of cases.

The great majority of strangulated hernie are necessarily operated upon by the rank and file of the profession and frequently under every disadvantage. Their results we seldom find in print. I operated lately upon an undertaker from a neighboring town for the radical cure of hernia. He said that he did not dare to go without it, for he had buried five of his friends and neighbors who had died from strangulated hernia, and that, as I remember his statement, they had all been operated upon by the local physicians whom I personally know to be an exceptionally good lot of men. Regarding the rapidity of strangulation I shall never forget one of my early experiences with strangulated hernia, when some ten years ago I was called upon to operate upon a young man just four hours after the first appearance and immediate strangulation of a small intestinal hernia. Taxis failing both before and after anæsthesia I opened up the sac, expecting that at this very early hour I should find the in-

testine but moderately congested, but what was my horror to find it as black as my hat and quite lusterless in one spot. Evidently it was not quite as bad as I at first thought, for in about twenty minutes time it was so much changed for the better that I felt safe in returning it to the abdominal cavity, and the man eventually recovered. This experience has always been before me, and has impressed firmly on my mind the urgent necessity of haste. This I believe to be especially true of small intestinal hernia or of a hernia which has been strangulated at its first appearance, because in the act of descent the fascia is frequently torn, leaving a sharp edge at the neck of the sac which cuts the tender intestine like a knife. Velpcau reports a case of gangrene of the bowel only four hours after strangulation. Erichsen, one after eight hours. Such results are of course rare, and many cases are reported where the bowel was restored even several days after strangulation.

A friend of mine recently operated upon a case of some four days' strangulation, where the intestine was so dark colored that he did not dare to put it back, leaving it exposed in the wound with the expectation that it would certainly become gangrenous. On removing the dressing some 24 hours later, he was surprised to find the intestine looking quite normal; he therefore carefully put it back into the abdominal cavity, and the patient recovered.

We see then by these few examples, that even if the intestine is of a blue black color, and even if it has lost its luster, of which the text-books all speak, it is not sure to die; but if the color is of a dark grayish tinge and particularly if there be a small greenish spot upon it, the prognosis is very bad. We then have to decide between a resection, or leaving the intestine in the canal to form a faecal fistula, providing the patient recovers. The mortality in either case is very bad. Personally, I believe that in the great majority of cases we had better not try to make a resection at once, for the patient is dangerously sick; the bowels are loaded behind the point of strangulation, and I believe that we will conserve the best interest of the patient by waiting and later doing a secondary operation to restore the continuity of the bowel.

After this rather lengthy digression, let us return to our supposititious case, and consider what we will do if called in to see a strangulated hernia.

First, to determine if the case is really strangulated. If we find an irreducible tumor protruding through any of the ordinary hernial openings associated with the ordinary symptoms of

\*Read before the North Dakota Medical Society, May 24, 1899.

strangulation, the chances are in favor of its being the condition under discussion. What are the symptoms of strangulation?

I should say first and foremost, vomiting. This may come on at the very moment of strangulation and continue to the end. The patient first expels the contents of the stomach, followed later by the contents of the duodenum and then of the small intestine. Sir James Paget says: "If I were asked for the sign of strangulation which I would most rely on, as commanding an operation, I should certainly say the vomiting." Fæcal vomiting is of course a very alarming symptom, but we should not despair; for I have seen fæcal vomiting which had existed for thirty-six hours before an operation for intestinal obstruction, and which continued for several hours afterwards, disappear in the end and the patient recover.

A word of warning just at this point: I believe that it is dangerous to push the anæsthetic in these cases of intestinal obstruction, from any cause, and it is not wise to elevate the patient, if it is possible to prevent it; for the sphincters may relax and the patient aspirate enough of the intestinal contents into the lungs to produce an aspiration pneumonia, or in extreme relaxation may even drown the patient in his own stomach and intestinal contents. This accident occurred to me about a year ago, when in an operation upon a malignant stricture of the sigmoid with obstruction, it was necessary to keep the patient in the Trendelenburg posture for some time, the patient's pulse and respiration being very good until just before the fatal gush.

The other symptoms of strangulation are collapse, which is usually most pronounced in acute hernia, or where the intestine is strangulated at the time of its first appearance. The patient looks older, the face is haggard, pinched, the brow covered with perspiration, the pulse small and compressible, ranging from 120 to 140; the pain is usually quite severe and colicky in character, although occasionally there may be no pain at all, and the patient not even aware that he has a hernia. The pain when present is usually of a sickening character, due partly to the traction on the mesentery or to sympathetic action upon the great abdominal nervous plexuses. Constipation in hernia seems to be due not so much to the obstruction as to the stopping of the peristaltic movement of all of the neighboring coils, and this is, of course, also due to the abdominal sympathetic nerves. Constipation is also present in Littré's hernia, where only a small part of the intestine is included, from this same cause. Treves reports three cases out of fifty-three, where, on the other hand, diarrhœa was present in these partial herniæ of the intestine. Absence of impulse is always present in strangulation. The tumor feels constricted, and although it may not

be entirely immovable, it moves only with the abdominal wall; the ordinary expansile impulse which is felt upon coughing or straining in all non-strangulated herniæ is here lost. Jacobson says: "Every case of hernia in which any change has taken place in the condition of the tumor, such as increase in size or tension, whilst expansile impulse is absent, should be regarded as strangulated."

We now come to the subject of treatment, and first of course we would try taxis. It seems to me that in these days of antiseptic surgery the authorities are apt to magnify a little the dangers of taxis, forgetting how valuable an agent this procedure was in the hands of our forefathers. Compulsory taxis which reduced the hernia by brute force, whether it would or no, as practised by Amussat and his followers of the French school, who used this method in the early part of this century, was bad surgery, and would not be countenanced in this day, but intelligent, gentle compression, first drawing down the hernia to loosen it at the neck, then gently kneading it back in the axis of its descent, while the compression is kept up by one or several hands, will often succeed.

Erichsen says: "Taxis when properly performed is seldom attended by any serious results. I have never seen it followed by death, and out of 293 cases reported by Luke, as having been reduced by taxis, in the London hospital, none died."

Erichsen advises that the attempt to reduce the hernia by taxis be limited to not more than one-half hour, by one surgeon, and not to be repeated. This seems to me to be rather a long attempt. I have never felt justified in using taxis for more than one-half of that time. Partly inverting the patient and abducting the leg, aids in the performance of taxis, always remembering the possibilities of reduction en masse, especially in femoral hernia. In the event of the failure of taxis I do not think we should wait to apply ice bags, lead plates or to use the hot bath, except for the necessary time which it will take to make preparations for the operation, and I believe perhaps that it is better to avoid much of any attempt at taxis until the preparations for the operation are all made and the patient has been anæsthetized, for the anæsthetic more than anything else relaxes the tissue about the neck of the sac, and so very materially aids in reduction. If after a fair trial of say ten or fifteen minutes the tumor cannot be reduced, then we should be prepared to immediately proceed with the operation of herniotomy. The operation should be done with as perfect antiseptic precautions as our knowledge and the surroundings will admit, for although the relief of the strangulation is of the first importance, the cure of the hernia will also be usually possible if the operation is cleanly



done. If the operation is not cleanly done the radical cure part of the operation will fail even though the patient recover, for suppuration of this wound is almost sure to be followed by a relapse.

In operating upon an inguinal hernia the center of the incision should lie over the external ring, for the point of constriction will be found somewhere in the canal and to reach it the canal will have to be opened; then again in closing the wound and restoring the posterior wall of the canal so as to prevent a return of the hernia, the canal will have to be widely opened.

The sac should be carefully opened, for although the point of constriction may be found opposite the external ring, it is frequently at or near the internal ring, so to reach it the sac will have to be divided up to this point. The intestine is now fairly exposed, and if not gangrenous, is drawn out, carefully examined and wrapped in a clean, wet towel, or a piece of gauze. If the intestine soon commences to regain its normal color it may be replaced. If the omentum is thickened or inflamed it should be ligated in sections with catgut and amputated. The intestine and omentum are now returned into the abdominal cavity; the sac is now separated from the cord, or in a congenital hernia cut away from either side of it; then we should ligate the sac with catgut as far up as possible, to prevent leaving an intraperitoneal dimple at the internal ring which would predispose the patient to another hernia. In dissecting loose the sac it is well to remember the possibility, especially in direct hernia, of the presence of the bladder in the sac, or rather that the bladder may form a part of the sac wall. This point was very forcibly impressed upon my mind some three years ago, when operating upon an elderly, fat, old gentleman, suffering from strangulated hernia, where I opened the bladder before I discovered that this condition existed. I closed the bladder wound, completed the operation, and put the patient to bed, with a soft rubber catheter held in position by a stitch through the meatus. A little blood came with the urine from the catheter for the first twenty-four hours, but after that time the urine was perfectly normal in every respect. On the seventh day he became mildly delirious. On the eighth day he got out of bed and walked out into the hall, his pulse and temperature being perfectly normal all of this time. On the tenth day he ate a good dinner, was perfectly clear, no inflammation about the herniotomy wound, and was apparently on the high road to recovery. About one-half hour after dinner, he called to the nurse and said that he felt badly; she went down stairs to call the house surgeon, and when she got back the old man was dead.

I could not get a post mortem of this case, so I do not know what effect my wounding the

bladder had upon the ultimate result. I was consoled somewhat by reading a paper on bladder injuries during herniotomy, by Curtis, of New York City, in the *Annals of Surgery*. He reports one or two of his own cases and several others by the best known surgeons of New York City.

The sac having been ligated and cut off, the cord is held up out of the way, and the posterior wall of the canal is restored by passing from within outward several interrupted sutures, which include the internal oblique and transversalis muscles and transversalis fascia above, and the deep shelving portion of Poupart's ligament below. Sometimes the inner edge of the rectus is included and the lowest suture should transfix the conjoined tendon.

The cord is now dropped back and the canal closed by suturing the divided aponeurosis of the external oblique, and a skin suture finishes the operation. In regard to the suture material: Bull, Cooley, Marsey, Fowler and others advise the use of the kangaroo tendon; my only objection to this material is the difficulty of rendering it sterile and keeping it sterilized. When Dr. De Witt was with me, he sterilized our tendon by boiling in alcohol and keeping it in bichloride alcohol. His results in non-strangulated hernia were good; his only relapse out of fifteen cases was an elderly man where he used dry, sterilized catgut.

On the other hand Dr. Will Mayo recently reported in the *Annals of Surgery* 200 radical cure operations where he used only dry sterilized catgut and nothing else, with only a few relapses; seven I think was the number. But these statistics, like so many others which we frequently see quoted, are, as Jacobson justly says, of altogether too recent a date to justify the claim of a permanent cure. Cooley's statistics include many cases from one to six months after the operation. Such reports are necessarily unsatisfactory, for we know that the oldest discarded methods of operating often did not show relapse for a longer time than this after the operation.

I have used kangaroo and silver wire with satisfaction. Halstead claims that after the use of silver wire the wound may suppurate and still close by granulation over the silver wire and the wire not have to be removed. Halstead believes that this is due to the antiseptic properties of the silver. I have personally seen silver wire exposed in a herniotomy wound after the discharge of one hæmatoma, and the wound close perfectly by a later union, but without true suppuration. But on general principles I prefer an absorbable ligature. For the past year I have been using catgut which has had a slight hardening in a formaline solution and then dry sterilized; the results after the use of this suture have been perfect up to the present time. My friend Dr. Stone

has been using this formaline catgut in all of his surgical work without any suppuration which could be justly charged against it. Some operators use buried silk worm gut sutures in this operation, but I have seen too many late suppurations to feel safe in using this material, unless it were in a case of necessity. Within the past month I have seen a case where a radical operation was performed for a right inguinal hernia, containing an ovary and a Fallopian tube; where the primary union was perfect but within a month the wound suppurated and had to be opened and every one of the sutures removed.

As you will notice, I have described Bassini's operation for radical cure, because I believe that it is decidedly the best. It is founded on the correct anatomical principle of reestablishing the obliquity of the canal and closing the internal inguinal ring to its normal size. Halstead, by leading the cord through all the muscular and fascial planes above, and Fowler, by drawing it through below, loses this valve like action of the abdominal muscles and leaves a weak point along the cord directly through the anterior abdominal wall. Andrews' imbrication method is an excellent modification, useful, especially in elderly, fat patients and also in relapsing cases. As Andrews says: "Kohler's operation is a step backward." This as well as the other older methods of the so-called radical cure need not be considered.

And now for a word more regarding the other special herniae. Femoral hernia is usually constricted at the upper edge of the canal, due most frequently to Gimbernat's ligament, so that our incision should be made above the hernia, and I believe that the best exposure can be made by following the line of Poupart's ligament. In dividing the point of constriction the herniotomy knife should be turned upward and inward, dividing the constriction by several superficial nicks. In a fairly recent case, a radical cure may safely be added here by using either Marsey's purse string or Bassini's interrupted suture in closing the canal, and drawing Poupart's ligament and the pectineal fascia together. After either of these methods we may look forward with every confidence to a large proportion of radical cures.

In strangulated umbilical hernia we should first make an incision over the lower part of the sac, for, as Mr. Wood says: "The point of the strangulation in an adult umbilical hernia is most frequently at the lower border of the neck of the sac, where the action of gravity and the dragging weight of the intestines and pressure and weight of the dress, combine to press downward upon the sharp edge of the abdominal opening. It is here that adhesion and ulcer of the intestine are most frequently found."

The mortality of strangulated hernia, as reported by Cooley, is between fifty and eighty per

cent. He believes that this mortality in umbilical hernia is because it is usually seen in stout women, who are always bad subjects for any form of operation. In addition the hernia is usually complicated by a large mass of irreducible, adherent omentum, which delays an operation that is largely dependent upon rapidity of execution for its success. My own experience would lead me to believe that this percentage of mortality is much too high. I believe that if the operation is not delayed, the results here should be almost as good as in either femoral or inguinal hernia.

In performing the radical cure for umbilical hernia, success depends not so much on the form of suture as upon the accurate suturing of layers. If with the scissors we open the sheath of the recti muscles upon either side of the opening, we will then have the peritoneum and transversalis fascia below, and the fascia of the external oblique above the muscles. The peritoneum and transversalis can be united with a continuous catgut suture, but the fascia of the external oblique should not be united with any continuous suture, because the circulation in the fascia of the linea alba is poor and a continuous suture is apt to strangulate the fascial edges.

Fowler's figure of eight suture, the lower loop just picking up the edge of the fascia and the upper loop taking in the adipose and skin layers, has given me the very best of satisfaction for the past two years in this class of work as well as in all laparotomy wounds. This suture keeps the fascia in accurate apposition and still can be removed at any time; my rule is to leave it in for from two to three weeks and to wait until the fascial union is firm and there is no danger of its stretching, to later allow of the formation of an operative ventral hernia.

#### ON SUBINVOLUTION OF THE UTERUS.\*

By F. J. CAMPBELL, Ph. M., M. D.,

Fargo, N. D.

During the past three years I have made incomplete notes of a number of cases, the study of which has led me to the conclusions which are the basis of this paper and which I hope will elicit your opinions in discussion.

In the first place permit me to call attention to one causative factor in the production of subinvolution of the uterus.

I do not wish to enter into any description of its pathology, which is unnecessary here, but to bring out one item which enters largely into its causation and for which the profession has not been held responsible. I do not know that we should be so held, but there enters into the matter an element of responsibility which is frequently lost sight of.

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I refer to the neglect by the patient of herself after miscarriage. Subinvolution is largely a product of neglect, not of the physician but of the patient. Gynæcology flourishes largely because of this neglect. Much operative work would not be necessary if it were not for this neglect. The first six weeks after the puerperium is the golden time of election to prevent pelvic congestion and its attendant train of well known evils.

More important still than this time is that immediately following miscarriage. I say more important because it is more neglected and its value is not generally understood as a preventive of the subinvolution condition.

It is in these cases that authoritative demand should be made for local attention and its reasons pointed out. For several reasons patients neglect themselves at these times. They are apt to consider the condition rather trivial as compared with childbirth, and if they consent to give nature any chance at all to complete involution, it is only at the decisive command of their attendant.

They frequently consider the cautions and advice of their physician as well meant and along the line of medical duty, but as rather perfunctory and wholly unnecessary. Here is where the element of our responsibility enters the case, where we need to speak up sharply and explain carefully why and how it is that care along proper lines for a few weeks will prevent so much after trouble.

When patients are taught that a lacerated cervix does not necessarily carry with it any criticism on the obstetrician, that we often have no way of preventing it, that it is nothing to be ashamed of as denoting improper care, that it is by no means settled as good practice to sew it up at once by primary operation, that if it occurs very extensively it should be repaired within a few weeks after the puerperium as a preventive measure, or some other means used to prevent pelvic congestion—then these patients will not only appreciate the value of medical honesty but will not, in future years, wander from one M. D. to another getting various opinions on their condition because of an unjust suspicion of their obstetrician's care.

It is self-evident that miscarriages result in emphasizing whatever pathological condition of the uterus there was in existence before. Given a cervical laceration with no special symptom referable to it, a miscarriage adds the subinvolution conditions.

The cervical canal and lacerated parts roll outward and become eroded by vaginal secretions. The glands become cystic, the whole organ becomes larger and soggy, heavy, retrodeviated or prolapsed. The general pelvic circulation is interfered with, a venous stasis is produced with œdema and oftentimes a full erectile condi-

tion of all blood vessels. There follow, more or less promptly, all the disorders attendant upon pelvic congestion.

In thirteen cases I have had the opportunity of operating for old lacerations within ten days after a miscarriage.

In twelve of these cases the results were good, so far as I have been able to follow the cases. Involution was obtained promptly and in nine of them no local depletive measures had to be resorted to in order to complete involution and restore pelvic circulation to the normal condition. I attribute the failure in the one case mentioned to an old gonorrhœal infection which made me hesitate somewhat about operating at all.

In this list of cases there has been no case of cervical tear in which, after careful consideration, I have decided that operative work was necessary, in which I have used any topical applications to the cervix or endometrium as a preliminary preparation for operative work.

In all cases of subinvolution with pelvic congestion, whether they can be relieved permanently by local treatment and the correcting of malposition of the uterus or by operative work, it is important to enjoin abstinence from marital relations for several months in order to obtain the best results.

In no case have I seen any result that has led me to think it would have been more satisfactory if the cervical erosions had been healed up by a course of local applications, or the chronic endometritis stimulated by intrauterine applications. If operative work is indicated at all, it seems to me a waste of time and energy to puncture cysts and heal up cervical erosions by treatments preparatory to operating, and then in the process of operating denude the whole area so carefully healed up. The tissues unite in proper position just as kindly without any preliminary work.

I am satisfied that to give patients permanent rather than transient relief from uterine subinvolution and its involved list of symptoms, we may advise curettage with trachelorrhaphy and perineorrhaphy when indicated, with reposition of uterus at one operation without any previous local preparation other than that which obtains before every surgical operation—getting the parts surgically clean.

The operation of curettage is said to be the most important one in gynæcology on the basis of lives saved. Its technique varies in accordance with the condition of the case to be curetted, whether aseptic or septic; whether for a diseased endometrium or for removal of the products of conception. In the later cases it has been forced upon my attention that the curette is not a sufficiently accurate instrument for the diagnosis of uterine contents.

It is a safe and satisfactory procedure to dilate the cervix sufficiently to admit the finger to the fundus uteri. A complete knowledge is thus easily obtained of its contents.

In two cases this last year, I have removed a large mass of placenta and in one a fetal head of three months' development from uteri which had been curetted and douched five weeks before. If the first operator had dilated these cases freely enough to make a digital intrauterine examination, the patients would have been spared the results of incomplete work.

The traumatism of curettage plus that of the cervix operation serves as an efficient stimulant to uterine contraction. The restoration to the normal position of this organ and the toning up of the pelvic circulation by judiciously selected medicated tampons are, of course, often necessary adjuvants to the completion of the work.

In the list of cases referred to in which I have operated within ten days following a miscarriage, it has seemed to me that involution was completed quicker and the symptoms referable to pelvic congestion relieved more promptly than in cases operated upon months afterward. It seems evident that by selecting this time when nature is making its effort towards involution and is hampered by old pathological conditions, we may more readily aid the natural process of repair and obtain complete involution.

Another item that has seemed of value is this: While patients as a rule consider a miscarriage so trivial a matter as to need little attention on their part and no time in bed, they will usually concede all the time necessary in bed if the value of operative procedure at this particular time is explained to them.

### SOME ABDOMINAL OPERATIONS IN COUNTRY PRACTICE.\*

BY THOR MOELLER, M. D.,  
Hillsboro, N. D.

Mr. President and Gentlemen:

The country practitioner labors under difficulties, of which our brothers in the big cities have but a faint idea. Especially in surgery, where asepsis is a fundamental principal, it is only with the utmost care and patience that success will attend his endeavors, and never ceasing vigilance is the price.

Nevertheless, when success is attained under such conditions the satisfaction derived from it is proportionate.

When major operations for chronic ailments are required by wealthy patients, I am ready to advise them to avail themselves of the experienced operators and modern operating rooms of the big cities, but in country practice there are a great many cases that cannot afford to travel

and pay the large fees in these places, while they can recompense you fairly for doing the work here. There are cases who will rather trust to you than to one of those surgeons, however distinguished, whom they do not know. Add to these the acute cases, where immediate interference is imperative to save life, and you have quite a numerous class of cases that require your personal and earnest attention. If an operation can help them, you should not be backward. I venture to say and I believe to have demonstrated, that even abdominal operations can be done with safety in any house, even the poorest, if water is abundantly used, antiseptics not spared and a personal active share is taken in the disinfection of the room and contents by the doctor, of course barring recent epidemic infection, with plenty of sterilized towels and sponges, with instruments and persons disinfected and plenty of boiled water.

Of the eighteen operations which I report to-day, only four were done in a hospital in a modern sense. In all the others I have personally scrubbed and disinfected everything. In one case the family lived in a restaurant, only separated off by curtains. Here I had a whole room partitioned off, everything scrubbed with strong carbolic acid solution and new bed clothes, etc., provided. Where an elevation of temperature existed on the third day, the stitches were removed and the wound treated openly, if the cause of the temperature was found in the wound.

Case I. M. Q., sixteen years; boy; strong and always healthy until February, 1894, when he developed an oblique inguinal hernia. A year after, on February 15, I performed an operation for the radical cure of this, according to Kocher's method. Discharged in three and one-half weeks, and is reported now, five years after, to be still well. No relapse.

Case II. G. S., two years; boy; congenital oblique inguinal hernia. On April 19, 1895, operation for the radical cure according to Kocher's method on right side. No relapse.

Case III. T. S., four and one-half years; brother of Case II. Congenital oblique inguinal hernia. Kocher's operation, April 24, 1895. Discharged in three weeks. No relapse.

Case IV. Same as case II. Oblique inguinal hernia of the other side. April 24, 1895. Bassini's operation. Discharged in three weeks. Relapse in four months.

Case V. A. K., tall, spare, pale; fifteen years; boy; lymphatic, father had catarrh for years, mother muscular rheumatism. Had been treated for over two months for nasal and bronchial catarrh, when he had an exacerbation of these symptoms, with elevation of temperature and constipation, which culminated in the development of a left oblique inguinal hernia, which could not be reduced. He was taken to the hos-

\*Read before the North Dakota Medical Society, May 25, 1899.

pital and operated on on the ninth of March last. It proved to be a congenital, oblique, inguinal, omental hernia. The omentum very dark, but viable, was returned to the peritoneal cavity, the sac divided, so that a part was left in situ to act as a tunica vaginalis, the rest cut away, and the wound treated according to Lucas Championnière. The patient had a temperature of 103° when put on the table, caused more by his pulmonary trouble than anything else. This spasmodical elevation of temperature kept up long after the wound had healed, and kept the patient in the hospital until May 8, when he was discharged. There has been no relapse, but only two and one-half months having passed since the operation, it is too early to form an opinion as to the permanency of the cure.

Case VI. Same as case IV. Relapse after Bassini's operation, a year after the first; three years old. Again Bassini's and is reported well now three years after, with no relapse.

Case VII. Mrs. V. had had pain in the left ovarian region for nearly two years, or since her first child was born, aggravated during menstruation. Found upon examination the left ovary tender and elastic to the touch. The operation of extirpation of this ovary was performed, the right was examined, found healthy and returned to the abdominal cavity and the incision closed. Pregnancy occurred within a few months, of normal course.

Case VIII. Mrs. A. A farmer's wife, strong and healthy, until the delivery of her first child in November, 1896, by a woman who claimed to be a midwife. About ten days after the delivery I was called to see her. She had been vomiting since the second day with profuse hemorrhage, chills, and was delirious at times. Her temperature 105.5°. On account of her extreme weakness the retained placenta could only be removed in three stages with intervals of five and three days respectively. The patient rallied, but had contracted a double pyosalpingitis, for the removal of which she presented herself four months later. Both Fallopian tubes, containing pus, and the ovaries, which were cystic, were removed, and the abdomen closed. Discharged in three weeks.

Case IX. Mrs. L. March 12, 1897, in the fourth month of pregnancy, having had symptoms threatening abortion, was relieved of both her cystic ovaries. She was out of bed on the ninth day and discharged on the twenty-second.

Case X. Mrs. B. May 7, 1897. Suppurating tubes and ovaries which were removed. This patient put on fourteen pounds in weight in two months after the operation and has gained ever since.

Case XI. Mrs. J. H. June 21, 1898, suffered from such severe dysmenorrhœa that she had to

keep the bed a week at a time. Both cystic ovaries were removed and the patient discharged on the ninth day.

Case XII. Mrs. A. H. M. Jan. 9, 1899. In the third month of pregnancy. Both cystic ovaries and a small subperitoneal fibroid removed. Patient discharged on the twelfth day.

Case XIII. Mrs. C. A. March 25, 1899. Cystic ovaries with firm adhesions to sigmoid flexure. In this case I had stitch abscesses. The wound was opened and allowed to heal by granulation. Discharged on the thirty-fifth day.

The three last cases were operated on in the hospital.

Case XIV. J. Y., a lumber jack, suffered to the point of lunacy from retention of urine. His bladder reached above the umbilicus, and expecting that it should rupture any moment, I decided in consultation with another physician to relieve him at once by trocar, in spite of the septic surroundings of a cheap boarding house, as I found it impossible to pass a catheter. A room better in a sanitary way was then prepared for a more radical operation. Again attempts at catheterization proved futile. He said that two years before under similar circumstances, suffering from an old stricture, a doctor had put his finger in the rectum and forced an opening from the bladder through into the urethra, curiously enough without rupturing the rectum or the posterior wall of the bladder. A suprapubic cystotomy and an attempt to pass a straight and flexible sound was made. This succeeded, but evidently through the wrong channel. I then enlarged the incision large enough to get my whole hand into his bladder, for which I had to open the peritoneum on account of unusual extension downward and adherence to the bladder of this membrane. Finding the proper opening I dilated the urethra from within until I could put my little finger past the deep urethra. A catheter was fastened there and the peritoneum and incision closed around a large drainage tube. I expected trouble, but got more than I expected. The patient had been on a drunk for two weeks and delirious at short intervals; he tore out both catheter and drainage tube time and time again. Apart from the difficulty of replacing the catheter, he developed phlegmon of his entire abdomen and sides threatening the spine on the right side, the extension of which was followed closely by incisions and drainage tubes with antiseptic bandages. He had at one time more than two feet of drainage tubes about his abdomen. However, he pulled through, and was discharged nine weeks from the time of the operation. I saw him a year and a half after this, when he said he felt as well as when a boy. He was thoroughly convinced he would have no more trouble.

Case XV. Mrs. S. March 19, 1896. Ventrosuspension of the uterus by a bundle of the rectus muscle and fascia for retroflexion. Discharged in three weeks, was well a year after.

Case XVI. P. R., a farmer of strong constitution, had been troubled for some time with his bowels, when intestinal obstruction occurred, with its attending symptoms. I was called June 13, 1895, nearly a week after, and gave him high and large enemata during a whole day, obtaining a doubtful expulsion of a little gas. I left, advising as a last resort that he be removed to town at daybreak next morning, if nothing passed from the bowel. He was not brought before the day after in the evening, when I gave no hope of any benefit from an operation, but as the patient declared that he would rather die on the table than suffer so, I prepared for operation. This was commenced at about one o'clock, a. m., and lasted fully one and one-half hours on account of the enormous distension of the bowels, which had to be incised in several places in order that the cavity might be explored, and on account of this it had been impossible to locate the seat of obstruction. These incisions were closed by Czerny-Lembert sutures and the omentum grafted over them. The obstruction was from a band of adhesions near the vermiform appendix, which was cut, and the patient being low, the abdomen was closed. He recovered from the anæsthetic and expressed himself as having no pain, but after about five hours of consciousness he died from exhaustion. The autopsy revealed a calculus in the appendix, and the bowel patent with impervious walls throughout its length.

Case XVII. Miss D. S. was treated two years ago for consumption, from which she apparently recovered. On April 10 last she was taken with severe pain at McBurney's point, chills, vomiting and temperature of 103.5°. I saw her on the eleventh, when the symptoms persisted, and advised operation. I called into consultation Dr. Bates, who agreed. The appendix was removed with a number of enlarged, cheesy, mesenteric glands. The patient is now up and about, but with a sinus leading down to some mesenteric glands, which it was considered too dangerous to attempt to remove on account of their difficult situation. Her bowels moved on the third day and she is feeling well. Temperature is normal. Some râles can be heard in the apex of her left lung. Her first stool after operation had the appearance of Paris green.

Case XVIII. Mrs. G. O., forty-five years; had alimentary troubles for years. I saw her first in May, 1896, but could not find any tumor, or sign of cancer of the pylorus for five months, when she commenced to lose flesh, tenderness appeared, a tumor could be felt, vomiting in-

creased, but still no coffee grounds, etc. She wanted operation, although probably too late. The abdomen was opened and a thorough examination showed the liver, gall bladder and pancreas involved and removal impossible. The wound was closed and she was sent home, where she died about two months after the operation. She also had these peculiar Paris green stools.

#### GENERAL MELANOSIS.\*

BY R. O. BEARD, M. D.,

Minneapolis.

The term "Melanosis" has been made to do a three-fold duty. It has been used synonymously with the term melanæmia, a rare condition, dependent upon the presence of an abnormal pigment in the blood alone, and quite distinct from true melanosis. Simple melanæmia is due to the presence in the blood of hemosiderin, a product of the decomposition of the hæmoglobin of the red cells. The histories of the few cases recorded indicate that, while occasionally acute and rapidly fatal, it is oftener of some chronicity and of indefinite duration.

The term melanosis has been used, also, to indicate the existence of melanomata without generalized disease. Used in this sense it may be fairly regarded as a misnomer. The melanomata are essentially localized lesions, although commonly of malignant type. Relatively infrequent among tumors, they are, nevertheless, the most common expression of melanoid disease. That they seldom lead up to the generalized form of the disorder, to which the term melanosis may be properly applied, is due, doubtless, to the fact that, in the vast majority of cases, these tumors are of a malignant and rapidly destructive character. The sarcomata are, of course, their prevailing type. Of forty reports of melanoid disease published in the past ten years, both in foreign and home journals, twenty-two are sarcomata, and four are carcinomata, eleven are forms of melanoderma, one is a melanoid myeloma, one a melanotic fibroid, while one only is of general melanosis without the known existence of melanoid tumor. In only ten per cent of these cases of melanoma was any evidence of the generalization of the disease offered.

The characteristic feature of the melanomata is the deposit of an abnormal pigment, melania, the origin of which is a matter of debate. While its relation to hæmoglobin has been denied by some physiologic chemists, it seems quite probable that it is the resultant of certain acid reagents upon the hæmosiderin or the hæmatoidin produced from the decomposed hæmoglobin of the blood. The bilirubin of the bile, which is practically identical with hæmatoiden, suffers, under

\*Read before the Minnesota Academy of Medicine, June 7, 1899.

certain conditions in the alimentary canal, similar changes. A physiologic illustration of this fact is seen in the meconium of the foetal fæces.

But whether this deposited melanin is a product of retrograde changes in the hæmoglobin of the blood, occurring primarily in such organs as the spleen and the liver, or whether it is an initial product of a disordered pigment metabolism, its distribution through the body fluids, and, sometimes, its redeposit in the tissues at large, are the features which mark a true melanosis. In all of its forms, excepting that of simple melanæmia, melanoid disease is accredited with invariable and rapid fatality.

These facts of the infrequency and the fatality of general melanosis have led me to reserve for several years the report of a case of so unusual a character and of so unique a history as to give it an almost unaccompanied place in medical literature.

G. B., female, aged thirty-eight, married in 1886; of a peculiarly nervous type, of slender form, with dark hair but light colored eyes and fair skin; had suffered for ten or twelve years with a most aggravated form of constipation necessitating a constant use of laxatives, and compelling, upon certain occasions, the evacuation of the rectum by mechanical means. Her history was otherwise free from known disease, up to the date of her marriage.

In 1887, a few months after her marriage, she had a sharp attack of pelvic peritonitis, and immediately following this she noted repeatedly a discharge of hemorrhoidal blood, of dark color and in profuse quantity.

Early in 1889, she consulted me to determine the cause of her apparent sterility. Upon examination, I found in the right cul de sac a smooth, globular tumor, of the size of a medium orange, which crowded and displaced the uterus laterally, although detached from it. I took her to Dr. A. W. Abbott, of Minneapolis, and to Dr. A. J. Stone, of St. Paul, for consultation. Both of these gentlemen diagnosed a parovarian cyst. The former advised the removal of the growth; the latter suggested the use of electricity, in the hope that the diminution of the size of the tumor would remove a mechanical bar to the occurrence of pregnancy. I followed the latter suggestion, using a galvanic current by means of a small intravaginal electrode, for over two months. In the third month she missed her menstrual period; the treatment was discontinued, and she passed through an uneventful pregnancy. During its course her habitual constipation was relieved and the discharge of hemorrhoidal blood ceased. In February, 1890, she had a safe delivery, giving birth to a healthy child. Examination, two weeks after labor, showed that under pressure of the gravid uterus the cyst had been almost obliterated, and only a small mass of indurated tissue was discovered.

Two years later she returned to me, complaining of pain and sense of heat and dragging in the right pelvis and of a return of the rectal hemorrhages. Examination showed that a gradual redevelopment of the tumor had occurred; it had attained more than its previous size and occupied a lower position in the pelvis. Again I consulted Drs. Stone and Abbott and both advised operation. In April, 1892, Dr. Abbott operated for me, by the abdominal route. Upon entering the abdomen he encountered a rather dense mass of adhesions, the partial separation of which revealed upon the peritoneal surfaces of the cavity of the omentum, of the mesentery, of the intestines and of the uterus and its appendages, a multitude of melanotic tumors varying in size from that of a pinhead to that of an almond. These masses were of a dense black color and too numerous to count. They simply studded the serous surfaces in every direction which eye or finger could reach. A further breaking away of adhesions revealed the primary growth, lying deeply in the right pelvis, of globular form, of the size of a rather large orange, with a smooth, serous covering, deeply pigmented, although not of so deep black color as that of the secondary masses. It was apparently attached by a broad pedicle.

Dr. Abbott and myself agreed upon a probable diagnosis of melanoid sarcoma and decided to close the incision without attempting the removal of the primary growth. For purposes of investigation, we excised two of the small subperitoneal tumors. These were examined microscopically by Dr. J. Clark Stewart, by Dr. Shimonek, of St. Paul, and by Dr. Abbott and myself. Dr. Stewart's report, to which I am indebted, covers the simple conditions found. He describes the specimen submitted to him as "a small, blackish tumor, about one-fourth of an inch in diameter, covered by smooth peritoneum. On section a distinct capsule is shown, filled by a blackish, putty like mass, in which some calcareous deposit has occurred which is encountered by the knife. Under the microscope this dark material shows no histologic elements, but a granular mass containing pigment in the form of small, dark brown granules. Occasional masses are seen of larger size, resembling cells, but showing no nucleus and not staining. No indications of new growth of a sarcomatous or other character were discoverable."

The patient made a good recovery from this exploratory operation. Her convalescence was, however, marked by certain peculiar conditions. The material vomited during the reaction from anæsthesia was of a dark coffee color, although no particular significance was attached to the event at the time. It was recalled, however, in connection with the evacuation of extremely dark colored stools during the following weeks.

The urine, within a few days succeeding the operation, took on the café au lait character which is said to be characteristic of the presence of melanoid sarcoma. Upon the addition to it of nitric acid a dark brown, granular pigment was precipitated.

Another event absolutely unique, so far as I have been able to learn from the history of melanosis, occurred toward the regular menstrual period. The mammæ enlarged, became tender and discharged an ink like fluid in large quantities. This black fluid could be expressed readily from both nipples. It was secreted, with a gradual decline in quantity, for several weeks. It was collected for examination and seen by several physicians. Dr. J. Clark Stewart examined it microscopically and reported it as "a dark brownish fluid in which floated the milk cells stained brown. It contained no pigment granules, either free or in the cells, and in this respect its pigmentation differed from that of the tumor previously described."

When the patient began to exercise, the hemorrhoidal discharges recurred. I took a specimen of this blood for microscopic examination at the time and found that it contained a granular pigmented débris and that many of the leucocytes showed a light brown pigmentation. In this mass, the blood was of a remarkably dark color, a characteristic, by the way, of the menstrual blood of that period.

A diagnosis of general melanosis was made and the patient's days were believed to be numbered. One of my consultants as to these later developments, Dr. Shimonek, expressed the opinion that her life would be limited by a year. In this opinion he was sustained by other able authorities. Dr. James M. French, writing in "Wood's Reference Hand-Book," voices the general consensus when he says: "The duration of a case of melanosis is from a few months to five or six years. The limit is usually one year after the generalization of the disease."

But my patient has agreeably disappointed that expectation. Ten years have elapsed since the first discovery of this condition and seven years since the operation was attempted. I have delayed the report of the case for so long a time in order that she might pass the recorded limits. Not only has she done this, but she has made progressive gain in general health, in contradiction of the authoritative statement, in which all bibliographers concur, that "after generalization of the disease, its course is invariably fatal." Twice, during these supervening years she suffered periods of discomfort from the pressure of the primary growth. Upon these occasions I have resorted to the early method of treatment by galvanism and with speedy relief. In the spring of 1894, she consulted me regarding the wisdom of bearing a second child. I consented

to the removal of the prohibition in this regard which Dr. Abbott and myself had laid upon her. But pregnancy did not occur and some displacement of the uterus was found to be present in consequence of the pressure of the mass. Three months of galvanic treatment again reduced its size and conception followed promptly. She passed through her second pregnancy and labor with success equal to that attending the first, her child being born in January, 1895. During the past year she has been unconscious of the presence of any foreign growth and at my last examination I found that it had materially lessened from its original size. Her abdominal measurements have slightly decreased. She shows a tendency to slight menorrhagia at times. She has suffered no hemorrhoidal discharge of blood for the past nine months. The old habit of constipation has been relieved by careful dietetic measures.

The case seems to be worthy of report as a contribution to the history of general melanosis: (1) because of the number and yet the non-malignancy of its melanomata; (2) because of the sudden generalization of the disease and the accompanying melanæmia, and, (3), because it stands, so far as I know, alone in its history of a seemingly established recovery.

#### ALCOHOL.

BY W. STUART LEECH, M. D.,  
Broten, Minn.

By the action of alcohol on the nerves there is a decided loss of muscular power with disorder of muscular coördination. Movements are premature and out of proportion with each other. To be brief, alcohol causes a retrogressive pathological process of the nerve elements, thickens the blood vessels, causes an overgrowth of connective tissue and lessens combustion. By lessening combustion and increasing the connective tissues it retards inanition. Here is where we find its proper administration in low fevers. A diminution of combustion necessarily causes the evolution of less heat. As the sensibilities are diminished this loss of heat is not felt. By delaying combustion it, no doubt, increases the tendency of the organism to freeze. As a fit illustration, an alcoholic subject will suffer from frosted limbs far quicker than an abstainer, provided the abstainer is in sound health.

Thoughts are generated, theoretically, by the bursting of cells in the brain. Under the influence of alcohol these cells explode prematurely and in a disorderly manner, thus giving rise to muscular in coördination or delirium tremens or both. Sleep lessens the explosion of brain cells, hence the paramount importance of sleep in alcoholism. Twitchell, however, thinks alcoholic delirium is caused by retained products of metabolism, a thought I cannot indorse.



Thudichum was the first to determine quantitatively the amount of alcohol eliminated by the kidneys from a given quantity administered, and the result he obtained was sufficient to disprove the elimination theory then widely prevailing. Dupie and many others continued these researches, from which, according to Dupie, they might fairly draw three conclusions: first, that the amount of alcohol eliminated per diem did not increase with the continuance of the alcoholic diet; therefore, all the alcohol consumed daily must of necessity be disposed of daily, and, as it was certainly not eliminated within that time, it must be destroyed in the system; second, that the elimination of alcohol following the taking of a dose was completed twenty-four hours after the dose was taken; and, third, that the amount eliminated in both breath and urine was a minute fraction only of the amount of alcohol taken. Dr. Percy published a research on the presence of alcohol in the ventricles of the brain, and concluded that a kind of affinity existed between the alcohol and the cerebral matter. He further stated that he was able to procure a much larger proportion of alcohol from the brain than from a greater quantity of blood than could possibly be present within the cranium of the animal upon which he operated. Percy maintained that alcohol acted by means of absorption on the nerve centers. Kingzell, in a paper before the British Association, claimed that in certain cases alcohol caused a hardening and an alteration in the specific gravity of the brain matter. Water itself has a strong action on brain matter (after death), for it is capable of dissolving certain principles from the brain. These principles include cerebrine, myeline and apparently a phosphorized principle insoluble in alcohol, together with that class of substance generally termed extractive. Water, however, dissolves no kephaline from the brain. Alcohol dissolves kephaline from the brain and many other substances which water does not affect. We are all familiar with the astringent or hardening action of alcohol on albumen. If the eliminative process is prevented the brain is also irritated on account of the local action and the paralysis of the cutaneous vessels.

Alcohol has an active avidity for combining with oxygen, and it is said to precipitate the albumen in the blood. Scharlan was able to find thirty per cent more carbon in the blood of drunkards than in that of healthy persons. Now, all cases of spontaneous combustion on record took place with the drunkard who had grown old and feeble in his habit; and every one of them, male and female, was remarkable for corpulency, or the opposite state, great emaciation.

Consider the mixed up condition of the phosphorus, carbon, oxygen and oils; and is it any wonder that spontaneous combustion occasionally occurs when they are continually bathed and

kept saturated with alcohol? Kopp collected seventeen cases of "Combustion, spontaneous human." One case has come under my observation which will be reported in another communication.

No person suffering from phthisis should be employed about cows. Consumptive persons should especially be forbidden to engage in milking or in the handling or distributing of milk. I do not like to contemplate the disgusting possibility of contamination of milk by sputa, but we cannot but admit that it might occur. Although the immediate cause of consumption is the implantation of the tubercle bacillus, it is still perfectly true that consumption runs in certain families and that constitutional predisposition is an important factor in the production of the disease. But it is not actual disease which is transmitted from parent to child, nor will any degree of tendency in the constitution induce it. The hereditary constitutional predisposition is simply a liability to tuberculous disease on exposure to the germs, a vulnerability of the tissues producing a suitability of soil. Two people may be equally exposed to invasion by the bacilli and one will develop phthisis while the other will not, and we can usually tell beforehand which of the two will succumb and which resist. It may be mentioned that gout seems to reinforce the resistance to infection by tubercle, and, curiously enough, so does the anæmia to which young girls are subject. Besides, however, a constitutional susceptibility, another reason why consumption prevails in certain families is that generation after generation live under the same unfavorable conditions in dark, damp, ill-ventilated houses—in houses very often which actually harbor the bacilli left by previous cases.—Sir William Broadbent in the London Lancet.

It is a well-settled doctrine, says Mr. Arthur N. Taylor, in the New York Medical Journal, that the master is not by reason of his relation to the servant liable for medical attendance upon such servant. If, however, a physician is called by a master to attend a servant in his employ such engagement has been held to amount to a direct undertaking by the master to pay, but if he is called by the master's wife, even with an express agreement that her husband will pay, the husband is not bound unless it can be shown that the agreement is made with his knowledge and consent or that he subsequently ratified the hiring. The reason for this rule may be readily perceived; the husband is never bound by the contracts of his wife except for necessities furnished to her or to her children; therefore a contract imposing a liability upon him for medical attendance upon a servant, which he is not primarily liable to pay, is beyond the scope of her authority.

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## UNIFORMITY IN THE STRENGTH OF DRUGS.

In another part of this issue will be found a letter from a well known firm of drug manufacturers, in which is pointed out the great discrepancies in the strength of various drugs, while a plea is entered for the adoption of standards which shall do away with this obvious objection. This is apropos of the coming revision of the Pharmacopœia next year. The letter recommends chemical analysis and physiological tests as the basis of standardization. It admits, however, that for the purposes of the Pharmacopœia the chemical analysis basis is alone practicable, since the average druggist can afford neither the time nor the apparatus for applying the physiological test. It says, although not in so many words, that drugs like ergot whose activity can be demonstrated only by physiological experiment, should be furnished only by those whose guarantee of activity and of a definite strength in the drug can be relied upon.

It is so much a matter of self interest for a manufacturing druggist to urge the use of preparations which he and his class can alone furnish that the recommendations of the letter demand close scrutiny.

That certain drugs vary greatly in strength is as true as it is deplorable, and no one realizes this more than the physician. There are indeed some drugs with useful qualities whose strength varies so greatly in different samples as to practically prevent their use. An example of these is cannabis indica. The effect

of this drug upon the higher nerve centers is most profound and striking, quite different from that of any other, and such that an important place in therapeutics would doubtless be found for it were it not for the wide difference in the strength of different packages, so that the only safe way to use it is to begin with the smallest dose and gradually increase until an effect is obtained, a most tedious and unsatisfactory method of procedure, especially if, as often happens, the effective dose is ten or twelve times the minimum. The reason why preparations of cannabis indica vary so is simple. The active principle of this drug is found only in the unfertilized female flower tops; the heads of the male plant and of the female bearing seed are practically worthless for therapeutical purposes. Moreover, there are three varieties of cannabis of which only one contains the real active principle, a resin, undistinguishable by chemical analysis from other resins in the plant. Even the expert chemist cannot distinguish with certainty among the three varieties of the plant when packed together in a bale. The only certain way to measure the activity of a specimen of cannabis indica is to apply the physiological test, and this is easily done upon animals as the symptoms of a full dose are well marked. Were the medical profession sure of being supplied with preparations of cannabis indica of uniform and known strength, the remedy would doubtless be much used.

Another important drug of uncertain strength is ergot. As is well known, not only do samples of the crude drug vary widely in therapeutic power, but an active preparation, if kept too long becomes inert. Chemical analysis of ergot is unsatisfactory because its active principles are not fully understood. Its activity may, however, be tested physiologically by noting the effect of its administration upon pregnant animals, or by the change of color in the combs or wattles of fowls marking the beginning of gangrene.

Those who are to superintend the coming revision of the Pharmacopœia will doubtless consider the matter of adopting the standard of the physiological test for those drugs whose activity cannot be otherwise determined, as well as the application of the same kind of measure to the strength of certain drugs like strophanthus whose preparations vary widely and dangerously. An investigation by Dr. Houghton, of De-

troit, reported in the Journal of the American Medical Association, showed some samples of *straophanthus* to be ninety times as strong as others. Where such extreme variation as this is possible there is a crying demand for the adoption of a standard of strength and of tests that will give at least approximate uniformity. The present Pharmacopœia requires a certain percentage of their chief alkaloids to be present in standard specimens of opium, *nux vomica* and *cinchona*. If the next edition makes no addition to this list, it will disappoint the expectations of the medical profession.

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## CORRESPONDENCE.

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### THE STANDARDIZATION OF DRUGS.

Editor of the Northwestern Lancet:

Sir:—We hope that none of the truly orthodox will be violently shocked by our heresy if we venture to avow the belief that the pharmacopœia was made for medicine and pharmacy, and that medicine and pharmacy were not created for the benefit and behoof of the pharmacopœia. In other words, no special preterhuman sanctity invests this work, though we ungrudgingly and heartily admit it to be a monument of medical, pharmaceutical and chemical learning, superlatively honorable to the distinguished scholars by whom it was reared. Since, however, it makes no pretensions to ideal perfection, and is systematically subjected to decennial revision so as to profit by the progress of science from year to year, surely it is not unfitting that we ask you in your editorial capacity—as one of the organs of professional opinion—to express your convictions, whether favorable or unfavorable, respecting certain principles which we for our part believe should be more fully recognized in the next edition of the Pharmacopœia. We have, indeed, the full right to place our views before the Committee of Revision, but, obviously, the views of a single manufacturer, howsoever just or liberal or sound, can lay no claim to authority and can have no weight beyond that resulting from their harmony with prevailing medical sentiment.

Long before the revisers of the U. S. P., 1890, had completed their labors, we made earnest, energetic use of every honorable means at our command to obtain pharmacopœial recognition for what we have, ever since 1879, regarded as the rational and vital principle of standardization. Since no two parcels of such highly important drugs as *hyoscyamus*, *belladonna*, *nux vomica*, *cinchona*, *opium*, *aconite*, *ergot*, *digitalis*, and others, contain the same proportion of active constituents: since different parcels of these

drugs, grown on different soils, or gathered at different seasons, or cured by varying methods, exhibit very marked fluctuations in the percentage of active principle (whether it be alkaloid, resin, glucoside, amaroid, acid or albuminoid) and corresponding fluctuations in medicinal power; since the diversities of the crude drug are necessarily and infallibly present in the extracts and other galenical preparations manufactured therefrom; since the varying potency of pharmaceutical preparations deprives treatment of its precision and is often fraught with positive danger to the patient—it is manifestly indispensable that each parcel of crude drug be first subjected to chemical or physiological assay and the resulting preparation adjusted to a fixed standard of medicinal power. In this way alone can the physician assure himself that a given dose of a powerful drug in the form of a galenical preparation will produce a uniform, certain, unvarying effect on his patient. Any lingering doubt on the subject the percentage on page four of the enclosed pamphlet ("Standardization of Drug Extracts") will forever dispel.

We do not pose as the discoverers of these important and unassailable truths; that honor belongs wholly to the great chemists who first discovered and isolated the active principles of many important drugs. But we do emphatically assert that the extensive scale on which we manufacture galenical preparations, and our wide experience with drugs of fluctuating strength, gave us at an early day a keen, vivid realization of the evil, and made us the pioneers in its correction. The first standardized preparations issued from our laboratories—there the first practical application of an important truth was made. And so, too, the first attempt to utilize physiological assay methods on a large scale in manufacturing operations was carried to a successful termination in our house.

The arguments set forth in the enclosed pamphlet could not be answered or ignored, and standardization was recognized in the last edition of the pharmacopœia by the formal adoption of standards for *opium*, *nux vomica* and *cinchona*—the exact standards, by the by, which we had previously adopted for the same drugs in our own work.

Logically and practically, there is no reason why the revisers of the pharmacopœia should hesitate to apply the same official sanction to the standardization of *belladonna*, *calabar*, *gelsemium*, *hyoscyamus*, *podophyllum*, *colchicum*, *conium*, *ipecac*, *stramonium* or *veratrum*. Their importance and their toxicity place them in exactly the same category with *opium* and *nux vomica*, and, on the same grounds of safety and uniformity, only assayed and standardized preparations should be used. Even the highly conservative British Pharmacopœia accepts the log-

ic of the situation, bows to the cogent argument, and provides in its latest edition (1898) for standardized extracts of ipecac and belladonna, in addition to opium, cinchona and nux vomica, the three drugs for which standards are prescribed by the U. S. P.

But it will be objected that such drugs as cannabis indica, digitalis, aconite, ergot and strophanthus are not susceptible of chemical test, and that chemistry has thus far failed to elaborate trustworthy means of measuring the quantity of active constituents or the degree of medicinal strength in a given parcel. Very true. The chemist is indeed helpless in the presence of certain important drugs, but not so the pharmacologist. Where the chemical test forsakes us we may fall back upon the pharmacological test on the living animal, and the elaboration of physiological assay methods is the latest and most signal triumph of the pharmaceutical laboratory. The nature of these methods is clearly set forth on pages 8 and 9 of the enclosed, also in the reprint of a paper by Prof. Warren B. Hill, M. D., "Medical Skepticism," which we are sending you under separate cover. We ask your careful perusal of the article by Dr. E. M. Houghton in the same packet, "The Pharmacologic Assay of the Heart Tonics," and of the reprinted editorials from the Journal of the American Medical Association, "The Strength and Reliability of Drugs," and from the American Journal of Pharmacy, "Pharmacology." The very interesting article on ergot in the enclosed tells its own tale. We might cite you no end of literature supporting our position as warm advocates of standardization, but we forbear, as not a single objection can be urged which is of weight beside the supreme consideration that medical practitioners demand and must have preparations of which a given dose can always be trusted to exert a given effect. What would you say to a manufacturer who offered you an unstandardized antitoxin for the treatment of diphtheria? You would rescot such a haphazard, hit-or-miss and uncertain method. But can you afford to be less exacting with ergot when facing some desperate emergency? Are digitalis, strophanthus, and cannabis indica such mild and innocent drugs that it matters not whether a given parcel of fluid extract or tincture be two or five times as powerful as a previous lot bearing the same maker's label? And are you content to take your chances simply because certain drugs are unamenable to chemical assay, when you know that the pharmacological test is abundantly accurate and reliable?

With all our boasted progress and enlightenment it is an unfortunate and unassailable truth that scores and hundreds of conscientious practitioners have wholly renounced the use of such powerful drugs as ergot and cannabis indica in the disgust and chagrin inspired by frequent fail-

ure to obtain curative results, by the utter worthlessness of many of the preparations on the market, by the inferiority of numerous parcels, and by the equally dangerous potency and toxicity of yet others occasionally encountered when least expected. There has been no uniformity, no certainty, only doubt and distrust culminating in the extinguished or lessened vogue of a useful agent.

Be the means of standardization what they may, every preparation of every powerful drug must be adjusted to fixed standards if the requirements of modern medicine are not to be ignored and scouted. Sooner or later, this principle of standardization will be practically recognized by every pharmacopœia, and in no partial or grudging manner, but broadly and freely. And the day is bound to be hastened by the enactment of laws forbidding the adulteration of foods and drugs, and demanding official standards of strength, quality and purity. Such laws are multiplying. A federal measure is no remote probability. One has already been drafted. The execution of these laws in respect to drugs will demand the establishment of fixed standards; and if the latter are not formulated by the Pharmacopœia of 1900, that great work will simply renounce a wide sphere of salutary authority.

There is indeed one great difficulty in the way of reform which we do not underrate, and the weight of which we candidly admit. Let us not gloss over it, but look it squarely in the face. There is scarcely a forlorn hope that the principle of physiological standardization, powerful and true and salutary and beneficent as it is, will ever gain admission into the Pharmacopœia! Why? Because physiological assay methods cannot possibly be applied to the small operations of the educated but non-manufacturing pharmacist, and it is the unwritten law of the Pharmacopœia to exclude that which can profit, not the great body pharmaceutic, but only the large manufacturer. We make no complaint on this score, nay, we applaud the conservatism that resists every innovation which gives added advantage or prestige to the large manufacturer and aggravates the tendency to transform the dispensing pharmacist into a vender of purchased commodities. The manufacturer needs no coddling. If favors are to be granted at all they should be reserved for the small producer, and not for his powerful rival. But under this theory of the Pharmacopœia, we cannot, in decent justice to you and the Northwestern Lancet, ask you to participate in a futile propaganda, in the leading of a forlorn hope, in effort to attain the unattainable. Better far to center all agitation and discussion on the practicable, on the further application of the principle of chemical standardization already recognized in the Pharmacopœia. To cinchona, opium and nux vomica let now be added all toxic, powerful or important drugs sus-

ceptible of chemical assay, belladonna, calabar gelsemium, hyoscyamus, ipecac, stramonium, veratrum and the others enumerated in the fifth paragraph of this letter. Let the U. S. Pharmacopœia likewise provide a definite test for the anti-diphtheritic serum as a concession to its incontestable merit, its wide employment and its established status.

As for the great principle of physiological standardization, we shall certainly continue to proclaim, in season and out of season, our conviction of its value, nay, its absolute necessity in the manufacture of the serums and preparations from drugs like ergot which can be judged only by their reaction on living tissue. In this inspiring work we know that we cannot and ought not to look to the Pharmacopœia for help, and for that very reason we earnestly hope that you will give us your aid in disseminating sound ideas respecting the advantage to the physician of preparations physiologically assayed. Of this credit and glory we seek no monopoly. It is open to every manufacturer who is willing to assume the burden of labor and expense involved in the adoption of a precautionary system which must be pronounced the chiefest distinction of modern pharmaceutical manufacture.

We apologize for this long letter and return you in advance our warm thanks for such attention as you may bestow on a subject which is very near and dear to us.

Sincerely yours,  
Parke, Davis & Co.  
W. W. Warren,  
General Manager.

## REPORTS OF SOCIETIES.

### MINNESOTA ACADEMY OF MEDICINE.

R. O. BEARD, M. D., Secretary.

Stated meeting, Wednesday, June 7, 1899, at the Hotel Ryan, St. Paul; the president, Dr. C. G. Weston, in the chair.

Dr. A. Shimonek, of St. Paul, presented a specimen removed from a case of

#### ABSCESS OF THE LIVER,

accompanied by the following report:

Wm. B., aged 51, farmer, residing the past ten years in South Dakota, had always enjoyed excellent health, having never been confined by any illness until the present malady, which commenced in a nondescript sort of way last November. His only complaint was anorexia and general weakness: this lasted some weeks when he began to have some pain in the liver region, followed soon by an attack simulating gall stone colic: intense pain in the right hypochondriac region and some jaundice developing soon after. All of this rapidly disappeared, leaving him in a

fairly good condition. These attacks were repeated at intervals of a few weeks until the early part of January last, when he had a similar attack, but much more intense in severity, producing a profound jaundice lasting two weeks before his death, which occurred on the twelfth day of May. During all of this time he attended more or less to his work, and with the exception of the jaundice was in a fairly good condition when he came under Dr. Stamm's and my observation, the latter part of April, 1899.

We found him greatly jaundiced, but quite well nourished, his appetite was very good, tongue somewhat coated, pulse strong and regular, normal in frequency, and temperature 98.5°. The urine was loaded with bile and the feces absolutely bileless. The lungs gave evidence of some bronchial catarrh but the profuse mucopurulent expectoration was entirely out of proportion to the extent of his bronchial trouble. There was an enlargement over the liver which was not at all painful on pressure.

Our diagnosis was gall stones which was given with quite a degree of certainty and an operation for their relief advised, to which he promptly consented.

The section showed an enlarged right lobe of the liver and below it a distended gall bladder, but a very careful and prolonged search failed to reveal any stones either in the bladder or ducts which were freely exposed throughout their whole course. Everything in proximity to the liver and stomach that could be reached through this route was investigated and nothing found that would clear up the cause of the profound and prolonged jaundice. The gall bladder contained a thick, syrupy bile to the amount of about eight ounces. Having found nothing of importance in the bladder or without the ducts, the bladder was closed with a double row of Lembert catgut sutures and dropped, and the abdominal wound closed. The patient's progress following the section was satisfactory in that that his jaundice commenced to clear up and his general condition improved and we congratulated ourselves on his apparent convalescence, though the philosophy of the result we did not try to explain nor attribute to the operation.

Just fourteen days after the operation, when his jaundice was reduced to a slight tint, the feces showing entrance of bile into the intestine in about a normal quantity and his mental and physical feeling was in an excellent state, without any premonition he was taken with excruciating pain over the liver and lower part of right chest necessitating large doses of morphine, hypodermatically, to give him relief. He went into a collapse some hours later from which he promptly recovered upon the use of stimulants. A general peritonitis with right sided pleurisy was soon

ushered in with violent symptoms to which he succumbed in 38 hours from the initial pain.

Post mortem made twelve hours after death revealed after quite a prolonged search the true nature of affairs which I show you in this specimen of chronic abscess of the upper part of the right lobe of the liver, which perforated simultaneously upward into the right pleural cavity and downwards into the peritoneal cavity.

The interesting features to be considered in the case are, the absence of symptoms in so apparently severe trouble, the patient as stated before was in good condition throughout his illness up to the time of rupture of the abscess. The explanation of this is probably two-fold, firstly, the chronicity of the abscess, its solitariness, its dense pyogenic membrane, fencing and walling it in thoroughly and preventing absorption and thus exhausting the pathogenic microorganism. Secondly, the bottom of the abscess cavity was in so close proximity to the hepatic duct, that it occurred to us possibly that nature established drainage through this opening into the intestinal canal.

Profound jaundice, or jaundice in any degree, is an extremely rare symptom of liver abscess and the question arises, what was its cause in this case? It seems plausible that pressure directly upon the hepatic duct or its ramification was an etiological factor and that closure of this opening by thickened pus or necrotic liver tissue, which was found in abundance in the abscess cavity, was another cause and the plugging and clearing of this tissue at times might have been responsible for the temporary attacks of jaundice and its disappearance prior to January, when the condition remained up to the time of exploration. Another point of interest was, no doubt, the establishment of communication between the abscess and a bronchus, which occurred some ten days before he came under our care, manifested by pain in the chest followed by cough and expectoration of considerable quantity of muco-purulent matter, tinged at times with decomposed blood corpuscles and liver tissue, being the color of pus found in the abscess cavity on post mortem.

It is difficult to account for the paroxysmal pain resembling closely gall stone colic and still it is not impossible that he was passing stones at those times, for they may, we know, be secondary to any condition in the liver which interferes with bile circulation.

What the etiology of the abscess in this case was we are unable to state, but I believe it is one of the many cases wherein the usual causations put down in the books are absent, that is: dysentery, inflammatory disease, ulceration and non-ulceration of the colon, traumatism, climate, etc., etc. This patient gave absolutely no history of anything that might be looked upon as the direct or indirect cause of his ailment and the best one can do in considering the source of infection is

that it came directly through the hepatic ducts from the intestinal canal.

Dr. Abbott recalled a case of abscess of the liver which emphasized the fact that the condition often obtains without any other than premonitory symptoms, excepting that of jaundice.

Dr. R. O. Beard, of Minneapolis, read a paper upon

#### GENERAL MELANOSIS.

See page 228.

Dr. A. W. Abbott, of Minneapolis, opened the discussion. He said, with reference to the case reported, that the first impression he had upon opening the abdominal cavity was that the case was tubercular. Further investigation, revealing the extreme melanotic character of the tumors, indicated melanotic sarcoma. If it had not been for the later melanotic symptoms, it might be thought that the masses in question were the result of scattered hemorrhagic accumulation. The generalization of the disease proved it to be a rare case of melanosis.

Dr. Shimonek, of St. Paul, enquired whether there had been any enlargement of glands in other parts of the body.

Dr. L. A. Nippert, of St. Paul, referred to a case of a male patient at 60 who had a naevus, of the size of a small orange, removed from the back. He returned in six months with between two and three hundred dermal sarcomata. He died in a few weeks and autopsy showed internal sarcomata of a melanoid type even in the heart muscle as well as in the liver and lungs and other organs. He inquired whether there was any suspicion of syphilitic taint in the case reported by Dr. Beard.

Dr. J. T. Rogers, of St. Paul, inquired whether the patient had successfully nursed her children, what was the quality of the breast milk, whether the children showed any evidence of hereditary disease and what part Dr. Beard considered that the galvanic treatment had played in the case.

Dr. H. B. Sweetser, of Minneapolis, asked whether the patient was possibly liable to hysterical hemorrhages and whether the rectal hemorrhages had preceded the operation or persisted long after it.

Dr. Beard, in closing the discussion, said that the theory of hemorrhagic masses in the abdominal cavity suggested by Dr. Abbott was negatived by the fact of the presence of a distinct capsule of peritoneum enclosing these masses, and by the granular pigment present, which did not suggest the natural course of extravasated blood. The patient was free from all suspicion of acquired or hereditary syphilis. Her children were healthy; the first had been successfully nursed for some months; in the second lactation, the milk had failed both in quantity and quality and nursing was abandoned after two or three weeks. The

galvanism was used simply to diminish the size of the parovarian cyst, which was believed to be a mechanical bar to pregnancy—and by its reduction to diminish pressure, and these ends it accomplished.

The patient was not of a hysterical type and the pigment present in the bile, urine and milk was not due to hemorrhage.

The rectal hemorrhages had preceded the operation for a long time and had followed it at intervals for several years, until the past nine months.

## MISCELLANY.

### THE UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE MEDALS.

By the will of the late Dr. Vallentine Mott, perpetual provision was made for the following medals:

A gold medal to the candidate who shall prepare the best anatomical or anatomico-surgical preparation.

A silver medal to the second best of that description.

A bronze medal to the candidate who shall furnish the best book of recorded cases and remarks of the professor at the surgical clinics.

The gold medal is awarded to Albert S. Morrow, A. B., class 1901.

The silver medal is awarded to Arthur B. Bradshaw, class 1901.

The bronze medal is awarded to Willard Monfort, class 1899.

### THE OPHTHALMOTRICIAN.

The following letter has been widely circulated:

Philadelphia, May 26, 1899.

Dear Doctor:

The following resolutions presented by Dr. Louis F. Lautenbach, of Philadelphia, Pa., and supported and seconded by Dr. S. S. Towler, of Marionville, Pa., were unanimously adopted by the Medical Society of the State of Pennsylvania, on Wednesday, May 17th, 1899, at Johnstown, Pa.

Resolved, That it is the opinion of the Medical Society of the State of Pennsylvania that opticians are not qualified by their training nor are they legally qualified, to perform the work of the oculist, and they should not be consultants of regular physicians. Further it is

Resolved, That all physicians are requested to call their brother physicians in consultation thus discountenancing the growing pretences and assurances of the optician and his brother, the graduate optician, or as he is beginning to call himself the "Ophthalmotrician."

It is the purpose of the undersigned to present similar resolutions substituting "American Medical Association" for "Medical Society of the State of Pennsylvania" for adoption by the American Medical Association at Columbus, on Tuesday morning, June 6th, 1899.

It is hoped that you will in every way possible promote their passage, that you will vote and work for the same if present at the meeting, influencing your friends, who expect to attend, to do the same, and if possible send the resolution as passed by the Medical Society of the State of Pennsylvania to such medical journals as you think will best promote the purpose intended, with the view of having them present this matter in their editorial columns. I am

Yours truly,

Louis J. Lautenbach,

1723 Walnut Street.

Tonsillitis With Albuminuria.—Dr. Keiper has written of the case of a man, thirty-two years of age, the subject of albuminuria, and who was attacked by sore throat. Upon the upper part of the left tonsil there was seen an ulcer as large as a gold dollar, covered by an exudate similar to that of diphtheria. The exudate could be removed without causing the subjacent surface to bleed. The tonsil then appeared as if it had been curetted. It was treated locally with a 12.5 per cent. solution of silver nitrate. On the next day, after the second application of the silver, there was a hemorrhage from the ulcer. A mixture of dry tannic acid and antipyrine was made use of and the hemorrhage was arrested, but was renewed three hours later, and this time with more severity. It persisted in spite of all efforts to check it, and finally stopped spontaneously. The patient died nine days later without any repetition of hemorrhage.

The author explains these hemorrhages by an alteration in the walls of the vessels of the tonsils under the influence of albuminuria. This alteration is similar to that met within the same circumstances in the vessels of the retina and choroid.—The Laryngoscope.

The American Journal of Obstetrics says that every school that crowds fifty or sixty pupils into a room which was intended for only thirty is a recruiting station. Statutory laws should be enacted, with heavy penalty for violation, requiring school officials to supply each scholar with not less than twenty-five square feet of floor space and not less than one thousand cubic feet of fresh air per hour, to have the windows in the room so adjusted that the light will be admitted from the rear of the pupil, to prohibit persons who have tuberculosis from teaching, and to prevent scholars with the same disease from attending school.

Birth Rates and Illegitimacy.—Recent statements regarding a diminished birth rate in this country call to mind some of the statistics that have been published abroad within a few years. The *Scalpel*, giving the figures for 1894, explained the low birth rate of Ireland as being partly due to the large immigration of able-bodied adults. Of the children born in that year, 53,922 were boys, and 51,433 were girls; the predominance of the male sex being thus equal to nearly 2½ per cent.

The *Scalpel* goes on to say: "The chief feather in Ireland's cap is the comparative infrequency of illegitimate births. So great, indeed, is this distinction that the Registrar-General draws special attention to the fact by remarking, somewhat inconsequentially, that 'it is not unnecessary to say the proportion compares very favorably with the returns from most other countries. The illegitimate birth rate for the entire country was 2.7 per cent. of the total, but it varies greatly in different provinces. In Ulster 39 children in each 1,000 were born out of wedlock; in Leinster, 27; in Munster, 22; while in Connaught the number fell to 1. We are certainly of opinion that instead of most, the official dictum might well have been all other countries."

This calls to mind that M. Paul Bourget, in his book describing his travels and experiences in America, was unkind enough to say that society in New York spent its leisure time in looking up their grandparents. A remark which called forth the retort from Mark Twain that in this they differed from the French, who spent most of their time in looking up their parents.

Robert T. Morris says in the *American Journal of Surgery and Gynecology*: Make a correct diagnosis of appendicitis before operating. This is readily done with accuracy by almost any one who has read the works of authorities and who is careful and painstaking in making use of his opportunities for observation. Skillful palpation gives us the best single resource for close information. Not long ago a little brother of one of my patients made the diagnosis after the family physician had gone. This is about the story as he gave it to me en route to see his brother: "Jimmie and I were throwing snowballs, and all at once he began to have awful colic. He had felt sort of bad since yesterday. Mamma sent for the doctor, and he said that Jimmie had eaten something wrong, and gave him some medicine. After doctor had gone Jimmie said that his stomach was sore, so I pusht on his appendix to see if he had appendicitis; and when I pusht there Jimmie yelled right out. He said that was the spot. I didn't wait to tell mamma, but ran right down to the doctor's office. 'Doc-

tor,' says I, 'Jimmie has got appendicitis.' 'No,' said doctor, 'he just has stomachache.' But I told him how I pusht on Jimmie's appendix, and how Jimmie said that was the spot, and he went back and lookt again, and told me to come in and get you." I operated. It was a so-called fulminating case of appendicitis. In another case a farm hand gave us about this history at his bedside: "I began to feel sort of sick to my stomach and squeamish last Tuesday. My stomach felt kind of sore, and I thought it was this 'ere appendicitis, but I wasn't sure of it till Friday, and then I sent for the doc." This was an ordinary farm hand, who did not send for the doctor until he was sure of his diagnosis. And the boy a dozen years old made the diagnosis after the doctor had had a chance and missed it.

Roberts states that experiments made by army surgeons show that pasteboard wads in blank cartridges are projected with a rapidity of about seven hundred metres per second, and that the expansion of the gases is considerable. With a blank cartridge a person can blow a ragged hole in a pine board similar to that resulting from the use of dynamite. The danger of wounds of this description is very great at a distance less than fifty centimetres, and blank cartridges ought never to be fired at a distance of less than two metres.—*Va. Med. Semi-Monthly*.

Deaver says that in a case of appendicitis the abrupt cessation of pain, previously located in the region of the appendix, followed by a fall of temperature, increased pulse rate, and an anxious facial expression, are symptoms which indicate the occurrence of gangrene.

Edes ascribes a great deal of the confusion existing with reference to the pathologic significance of albuminuria to a faulty nomenclature. He objects to calling Bright's disease any other condition but the one actually described by Dr. Bright. Transient, physiologic or cyclic albuminuria is quite common. In the majority of cases it is provoked by exposure, which often tends to raise the arterial tension and thus bring more pressure to bear on the kidneys. Excessive exercise and vaccination also enter into the etiology of this disturbance. The more frequent occurrence of transient albuminuria, with only traces of albumen, is due to the more delicate reagents used. Thus, with "Tanret" (iodohydrargyrate of potassium), it is said to be detected in the majority of cases of healthy persons; rising to 90 per cent. in soldiers returning from a review, and 100 among cuirassiers and infantry just vaccinated after a cold bath. The author concludes from this that these delicate tests are absolutely of no value since they do not draw a line between danger and safety. With regard to



casts, a small number of them does not greatly add to the gravity afforded by small quantities of albumen. The so-called "mucous" casts are of no significance. The large casts, which are pathognomonic of grave renal changes, usually occur when their diagnostic significance is made almost useless by other symptoms. The author also expresses a belief that the origin of many cases of interstitial nephritis in young persons, where no other sufficient cause can be found, might be due to some difficulty of micturition.—Indian Medical Lancet.

## NOTES.

### Defective Elimination.

Defective elimination is without doubt the cause of a large number of diseases.

Usually when the kidneys fail to do their work the skin comes to the rescue and vice versa. Occasionally when both are derelict the bowels may help, but to a small extent only. Again all the excretory organs may be ready, able and willing to perform their functions, but there is an emunctory at fault, which has become gorged and fails to carry to the "main" that waste product over which it exercises particular care, causing an interruption of metabolism. As a result there is an attack of a rheumatic or neuralgic character.

Tongaline, on account of its extraordinary eliminative properties, especially when administered with copious draughts of pure water, hot preferred, flushes the emunctories, thoroughly removes the obstructions and restores normal conditions.

### Prevention of Hay Fever.

In the January 21st, 1899, number of The Journal of the American Medical Association, Dr. Alexander Rixa, of New York, contributed a very interesting article on "Prevention of Hay Fever." After a highly interesting historical review, and a brief survey of the results achieved in the past few years, the writer resumes the results of his own investigations.

His ingenious researches for a number of years, regarding the etiology of hay fever, lead him to admit that the pollen of the Roman wormwood, ragweed (*ambrosia artemisæ-fovia*) is the primitive and active cause of this peculiar disease. By inhaling these pollen he produced the symptoms of genuine hay fever. He writes as follows:

From the time I found the pollen to be the exciting cause of the disease, I concluded in a logical way upon the proper treatment. I conceived the idea of rendering the receptacle aseptic by preparing the soil for the reception of the pollen. Naturally, they will find no proper soil

for a possible generation, propagation or development, destroying their existence in embryo, so to speak, and with it the real cause of hay fever. For this purpose I decided on the following treatment.

About two weeks before the onset of the disease I commence to irrigate or sterilize the nasal cavity and the post-nasal spaces with a harmless antiseptic solution, using the douche and atomizer. After giving a great number of antiseptics a fair trial, I decided on hydrozone as the most innocuous and most powerful germicide. Hydrozone is a 30-volume aqueous solution of peroxide of hydrogen. At the beginning I use it for irrigation diluted in the proportion of one ounce of hydrozone to twelve ounces of sterilized water. Nearing the period of the expected onset of the disease, I increase the dose to two or three ounces of hydrozone to twelve ounces of the sterilized water, according to the severity of the disease, using the douche, either tepid or cold, four times a day—morning, noon, evenings and at bedtime—while during the intervals I use the atomizer, with a solution of hydrozone and pure glycerin, or sterilized water, one to three, thus keeping the nares perfectly aseptic during the entire period, and preventing the outbreak of the disease in consequence thereof.

In most obstinate cases, when there is still some irritation in the nasal cavity, I give as an adjuvant the following prescription:

℞ Acid boracic, gr xx.  
Menthol, gr. iv.  
Glyco-thymoline, ʒ ij.  
Sol. eucain B. 4 per cent., q. s. ad ʒ ij.  
Sig. Use in atomizer.

As a rule this treatment was sufficient to avert the disease and keep the patient in perfect comfort.

### Scott's Emulsion Vindicated.

The medical profession and the trade have for the past year and a half been much interested in the fight between Messrs. Scott & Bowne, manufacturers of Scott's Emulsion, and the State Dairy and Food Commissioner of Ohio. The trouble arose from the charges made by the Ohio Food Commissioner that Scott's Emulsion contained a narcotic, which, if true, made it a misdemeanor under the laws of Ohio to offer it for sale without the regulation poison label.

Messrs. Scott & Bowne, feeling it a duty which they owed, not only to themselves, but to the profession in general, repudiated the charges in every instance, and since then the matter has been a subject for the courts to decide.

The suit brought by the commissioner against a druggist of Cincinnati for selling Scott's Emulsion, which the commissioner claimed contained morphine, was settled this week in the courts at Cincinnati by a verdict for the de-

pendants, entirely vindicating them and showing the injustice of these injurious attacks upon Scott's Emulsion, the jury being out but a very few moments.

The testimony brought out at the trial was overwhelmingly in favor of the claims of the manufacturers, that Scott's Emulsion had never contained a narcotic of any kind. More than a score of the best chemists in the country certified to these facts.

We congratulate Messrs. Scott & Bowne on their victory. It is the old story—"Truth crushed to earth will rise again."

#### A Food in Diarrhœal Affections.

Dr. A. Christoph, of Constantinople, reports an interesting case of a boy four years old, who was having thirty to forty passages daily, consisting of mucus and blood, and in consequence had been reduced almost to a skeleton, weighing only thirty-six pounds. The case had been diagnosed as one of melana which is usually considered an incurable malady. All the customary remedies had been employed without success. At the time of the author's first visit the child was almost in collapse. A warm bath was ordered together with thorough scrubbing of the body, after which the little patient was wrapped up in cotton. Internally Lacto-Somatose was given on account of its high nutritious value and its local beneficial action upon the gastro-intestinal tract. Under the administration of this preparation there was a constant diminution in the number of stools until they were finally reduced to three or four daily. The dose of Lacto-Somatose was then increased to 2 drachms daily, and milk and eggs were added to the diet. Much to the author's surprise the child steadily gained in flesh and strength and was fully restored to health after four weeks' treatment. In another case of membranous enteritis, as well as in the diarrhœa, associated with rickets, Lacto-Somatose proved equally serviceable, sometimes being given in combination with Tannigen if a more astringent effect was desired.

#### Better Still.

The influenza has been quite prevalent in a number of cities during the past month. In Richmond, there have been many cases, though no deaths distinctly attributed to it. It is affecting mostly those who have had the disease almost annually during the past few years. Although the attacks of this year are relatively mild, they are severe enough to keep business men away from their places of business. Phenacetin, or better still, antikamnia, with salol or quinia, and a little powdered digitalis added, has proved

a satisfactory plan of treatment, pre-supposing, of course, that the bowels are kept open, the secretions of internal organs are attended to, and that the patient is kept in-doors, especially at night or in bad weather.—The Virginia Medical Semi-Monthly.

#### Skin Diseases.

Luigi Galvani Doane, M. D., formerly physician to Department of Public Charity and Correction, New York, N. Y., finds Unguentine a remedy per se. It is soft, easily applied, its absorptive powers are good and its antiseptic properties are better.

"I have used Unguentine with satisfactory results in a large number of cases of eczema, comedones, psoriasis, and lepra vulgaris and find it especially adapted in all such cases.

"I am well satisfied with the use of Unguentine in general practice in cases where it is indicated, such as fresh burns, cuts, bruises, boils, felons and sore nipples."

#### The Diet in Chronic Diarrhœa of Infants.

If the child be under one year of age the diet must not go beyond the range allowed at that period of life.

Barley water and whey, perhaps milk according to circumstances and Mellin's Food, raw meat juice, white of egg or yellow of egg with water, mutton broth, weak beef tea, is a sufficient list of foods. It is generally asserted that animal broths are deleterious in diarrhœa; used in small quantities cold I have not noticed any prejudicial effect, and certainly the number of stools has not appeared to be increased.

"Treatment of Disease in Children."

Angel Money, M. D.

A writer in the Medical Council upon the treatment of earache in children asserts that drugs dropped into the ear for the relief of pain should be dissolved in oil rather than water, because the auditory canal and drum head are covered by skin, not mucous membrane, and oily solutions penetrate the epidermis better than water. The usual prescription of equal parts of sweet oil and laudanum is, however, objectionable, because vegetable oils soon become rancid in so warm a place as the auditory canal, and, if allowed to remain for some days, become a source of increased inflammation. In this writer's experience, an ointment of ten per cent cocaine and lanolin is the most efficient and safest local application for the earache of children. The ointment should be melted and dropped warm into the ear.

## LECTURES AND ADDRESSES.

## PRESIDENT'S ADDRESS.\*

BY F. R. SMYTH, M. D.,

Bismarck, North Dakota.

Members of the North Dakota Medical Society:

It is exceedingly gratifying to see such a large attendance, and when we consider the difficulty and inconvenience of so many physicians leaving their practices at the same time, it speaks well for the enthusiasm of our members.

We welcome our brethren from a distance who are here to lend us a helping hand and aid us in making this meeting a success.

To the non-medical visitors who honor us with their presence, I tender the thanks of the Society, and a hearty invitation to attend as many as possible.

The medical profession is not only an honorable one but is of ancient origin, and without entering into mythology we can find proof in holy writ of the antiquity of our calling. In the book of Chronicles we read that "King Asa in the thirty and ninth year of his reign was diseased in his feet, until his disease was exceeding great; yet in his disease he sought not the Lord but to physicians. And Asa slept with his fathers." The last clause shows that what we consider a modern product of American humor was in vogue nearly a thousand years before the Christian era. In modern times we are accustomed to and can enjoy jokes at our expense, as we have usually the satisfaction of knowing that in the hour of need the scoffer and jester turn with eagerness to us for help and relief.

To belong to our profession is an honor in itself, the appreciation of which can best be shown by a faithful performance of the many arduous and trying duties that devolve on the modern followers of Esculapius; but when additional honor is bestowed and the highest gift at the command of his fellow practitioners is entrusted in the keeping of one of our members, it devolves upon him not only to regard his own self-respect but also the honor and reputation of the profession, which for the time being is in his keeping. By actions better than by words can true gratitude be shown and I trust that in and at all times upholding the honor of the medical profession, I shall show myself not unworthy of the honor you have bestowed upon me.

The past year has been a history-making epoch. We can justly take pride in the part

taken and the record made by members of our fraternity in recent events, though working under disadvantages that can hardly be appreciated by those who have not read the personal narratives of the officers engaged. We all rejoice in the gallantry and endurance of our soldiers and our bosoms swell with patriotic pride on hearing of their victories and unprecedented achievements. Yet, as medical men, more interested in the relieving of suffering and saving of life than in its destruction, we must deplore the neglect and incompetency that brought suffering and death to so many citizen troops in filth-laden, fever-stricken camps.

In the camp at Chickamauga alone, from April 24 until September 1, 1898, one regular soldier died and during the same period, four hundred and twenty-five volunteers died. The almost incredible difference in the death rate is accounted for by the fact that regular soldiers were under the care of officers trained to their duties and in actual field or barrack service had seen and appreciated the advantages of proper sanitary precautions. These worked in harmony with the medical staff. Among the volunteers most of the officers were as ignorant of the principles of hygiene as of their military duties, and sneered at the surgeons as faddists and cranks when they advised that drinking water should be boiled, the dietary carefully regulated, latrines cleaned and disinfected and other necessary sanitary precautions taken.

In the field almost the same conditions existed. Although abundance of medical supplies and ambulances were provided these in many instances were left behind, intentionally or through the monumental stupidity of the system that left the medical corps without means of transportation for supplies that were absolutely essential to the medical care of an army in the field. In this connection I would like to read you two extracts from a recent number of the New York Medical Record. The first is from a paper on surgery in the recent war, read at a meeting of a New York Medical Society:

"Surgery in the Recent War.—Maj. William Duffield Bell, surgeon of the seventy-first New York volunteers, read a paper on this topic. He said that there was but one field hospital in Cuba, which was maintained chiefly through the efforts of Major Wood. This officer loaded his own horse, and those of the medical officers with him, as well as the three ambulances, with the necessary supplies, and by repeated trips moved his hospital from Siboney to Savilla. On June 30th he established his hospital about three miles distant from the San Juan hills, and near a plentiful

\*Delivered before the North Dakota Medical Society, May 24, 1899.

supply of water. There were three tents for hospital purposes. Although the hospital accommodations were for only one hundred, over six hundred and fifty were attended to the first day, and upward of four hundred more before the night of July 2d. There was no scarcity of dressing materials at this hospital. The hospital staff consisted of five surgeons, several hospital stewards, and a hospital company selected from the various regiments. Three ambulances and one or two wagons completed the outfit. Shortly after nine o'clock on the morning of July 1st, the wounded began to arrive, and for the next two days there was a continual stream of wounded men coming from all directions to this one place. Toward night, five additional surgeons were called in from the firing line to assist in the hospital, but in spite of this addition to the working force some men lay on the ground unattended for a period of from twelve to twenty-four hours. There was an insufficient supply of clothing, due to defective transportation facilities. The transportation of the wounded was a source of anxiety to the surgeons. Men with desperate wounds had to walk or crawl distances of from one mile to several miles over a wild and rugged country."

The second extract is headed Hospital Arrangements in the Soudan and refers to the medical arrangements in the British army that was invading the valley of the Nile about the time our army was operating in Cuba.

"Hospital Arrangements in the Soudan.—The arrangements made by the army medical department are most elaborate and complete. They have been made by Surgeon-Colonel Macnamara. A medical officer is attached to each battalion of artillery; then from each battalion, etc., are drawn thirty-two trained men, who retain their arms and can be otherwise used in emergency, whose business is to pick up and give first aid to the wounded and convey them to the field hospitals, which will be at convenient distances behind the brigades in some sheltered position. Behind each brigade are to be five field hospitals, each with one medical officer and accommodation for twenty-five men. In all these there is accommodation for one hundred and twenty-five wounded in the field hospitals of each brigade. From the field hospitals the wounded are to be conveyed as soon as possible, after treatment, to barges moored off the river bank, where there will be accommodation for men. There will be other hospital accommodation on the river bank. At the Atbara, ample and special accommodation has been provided. A hospital has been built of mud bricks, with walls some three feet thick and a lofty roof, the wards being ceiled with matting and thickly thatched with Dhurra straw. It is probably as cool a place as there is in the Soudan. Here is accommodation for two hundred men, but on so generous a scale

that if necessary another fifty or more could without any cramping be added to the inmates. Men reaching this hospital get proper hospital clothing and bedding, and have sheets to their beds. Six medical officers are in charge. There is another base hospital lower down the river, at Abadeah. Fifteen miles north of Berber is another big mud-brick hospital, with accommodation for three hundred men, who will be looked after by eight medical officers.—London Daily News, August 26."

In war there must always be some suffering, but with suitable organization an end could be put to scandalous mismanagement. Such mismanagement as resulted in the loss of hundreds of lives and led to mutual recrimination on the part of officials concerned as to who was to blame. A system that allows a veterinary surgeon to be appointed as the chief medical officer of a military camp can only merit condemnation from either a scientific or humane standpoint.

Now that we are at peace with all the world except our quondam friends the Phillipinos, and a universal peace congress is meeting in Europe it may seem out of place to devote so much time to the status of our profession in time of war, but it was the preparation in time of peace that gave us the naval victories at which the whole world has wondered. This subject will come up at the approaching meeting of the American Medical Association, when a resolution will be introduced condemning appointments made for political reasons only.

Another matter of general interest to the profession will probably come up for discussion at the meeting at Columbus and I think it would be well for this meeting to give an expression of opinion for the guidance of our delegates. I refer to the agitation that has been going on for some time in favor of a National Bureau of Health. The necessity of such a bureau or department appears to be generally recognized but there is considerable difference of opinion as to how it should be organized and two bills have been introduced in Congress, one providing for the enlargement of the powers of the Marine Hospital Service, and the other known as the Spooner bill, which has generally been endorsed by the medical profession. However formed the National Department of Public Health should have supervision of all matters pertaining to the health of the community and aid in investigations of a scientific nature as to the cause, prevention and treatment of disease.

One of the most important duties of such a department would be the supervision of the examination of medical students in general education and the examining and licensing to practice of graduates of medicine of the different medical colleges. By this means the teaching and licens-

ing bodies would be effectually separated, the standard of medical education raised and made uniform. We can hardly expect that foreign countries will recognize our graduates or admit them to practice on the same conditions as their own whilst there is such a diversity in the requirements in the different states.

With a program so varied and filled with entertainment and instruction it would ill become me to detain you from the main purpose of this meeting and I will now finish this introductory address by hoping that every member will take part in the discussions of the subjects brought before us and that we will return home better fitted to carry on the battle against the ills and ailments that flesh is heir to.

### MEDICAL FEDERATION.\*

By F. A. DUNSMOOR, M. D.,

Minneapolis.

At the beginning of this season, I wish to impress upon the members present my appreciation of the honor conferred upon me when elected president of this association.

It is my opinion that the medical profession is the most needed, most important profession upon the globe today; that this Association is the most important body in this state; that its influence, counsel, knowledge, and guidance is most necessary for the welfare of our citizens, present and future.

Some one has likened such a body to a chain, each member a link, and the entire organization no stronger than the weakest link or member. This is not true; there are no chains in medical progress; we are threads, strands and ropes, and no member is the "whole thing" big or little, how much so ever he or his friends may believe it. We are like woven and twisted strands of silk into one grand cord or rope. Each member, to the extent of his attainment, is of so much utility, no matter how short his length; and his effort and contribution goes just so far to strengthen and make up the grand total. We are proud of the long threads of power who lead, unite and strengthen our profession, but the best man in our profession will never decry the lesser, but be very certain that the very quality so different from his own is the one thing needful in its place to forward our profession as a whole.

We live in the age of trusts, and while the practitioners of medicine have the reputation of being clannish, there is and has ever been less federation for protection, or personal benefit, than in any other profession or business. The question of the wisdom of forming business trusts upon the gigantic scale now rampant does not concern us at this meeting, save that one

consider the basal reason for their existence, aside from speculation, and that is power.

It is the hope of the writer that this brief paper may aid in the closer federation of medical men to the end that mutual interests and public welfare be promoted, and that the medical profession may have that powerful influence upon the nation, which its high aims and scientific value entitle it to.

Our profession is in a seemingly anomalous position, in that each member is continually striving to blot out disease, when upon its very existence the medical man's living depends.

When a medical man has the time for surveying the scientific progress of his profession during the past century, with each decade brighter, he need not blush to compare it with any other. Think of advancement from the horrors before anaesthesia, of the safety, through knowledge, of the germ theory; and what can measure the advance in fifty years in pathology, histology, experimental physiology? The discovery of the germ habit and treatment of tuberculosis, diphtheria, and typhoid fever? The advance in the preparation of medicines; the knowledge of serum therapy, disinfection, and preventive medicine in general. In short, medicine may now truly be said to be upon a scientific basis. But there is something lacking in the way of knowledge of the facts among the laity; not that the personal friends, patrons, and acquaintances of any individual member may not be too conversant with the attainments of said member, but the value of the profession, and its discoveries, as a whole, or in particular, are too little regarded. The recommendations of public health boards are too often fatally ignored. The exclusion of learned physicians from many public offices requiring active or advisory participation in preventive medicine; and finally, the restriction hampering the ability and usefulness of the medical department of the United States army, all tend to show that the watchword of this, and the coming year, should be federation. Then shall our power, for usefulness, be so effective and apparent, that the profession may be held in that esteem, which will make the public eager to follow out, or carry on the warfare which shall stamp out disease.

It will not be within the scope of this paper to do more than hint at means which may not only put the profession in the right attitude with the general public, but make it the inevitable cause of the prolongation of life, of happiness, utility, and harmony at large. It is apparent that the profession must be united to instructing the public to their own welfare. As to the first: organization of all professional men of integrity into—first, local societies, with meetings, semi-monthly or weekly, in which each man may, nay, must take part, with reports upon the vital topics of the day, as well as pre-

\*President's address, delivered before the Minnesota Medical Society, June 21, 1899.

sentations of deductions from daily observation and experience. The universal attendance upon each meeting of the State Association, with trained mind for discussion or presentation of papers; since all matters connected with legislative or judicial procedures, or any scientific matter carrying the authority of this society, must be transacted at the morning business sessions, the presence of all thoughtful members, at that hour, is imperative. And finally, such loyalty to the American Medical Association as shall make that body, cemented with each of ours, so nationally powerful as to compel adoption of our recommendations for the benefit of public health, by national, state and local authorities.

It is often, no doubt, a sacrifice of business and time, or personal advantage, to attend every meeting, but if there is any truth certainly proven it is that duty well done, in spite of sacrifice, with not a design for personal benefit, always pays.

The truism that "familiarity breeds contempt" is as sad as it is true. This week, an editorial in one of our prominent newspapers considers the question of preventing cyclones or tornadoes, the editorial was evidently inspired because of the disaster which had overtaken the towns of New Richmond and Herman, while a report of the fact that double that number of fatalities occur hourly in our land from tuberculosis, bores our aldermen and legislative bodies. We should be eternally vigilant in the fight with this giant foe, unite with every effort of our local health board; secure aid from state legislation; send delegates to each national and international congress, until the entire population, aroused and informed, join in the extinction of a disease which may depopulate our globe.

Reports from numerous physicians and health officers, showing deaths from typhoid fever traceable directly to polluted streams and water supplies, will not cause a city to buy a filter at \$150,000, when it will spend millions upon temporary bridges and less vital improvements.

It is evident, that the world over, rivers are used as sewers. It is simply marvelous to us to see how comparatively few persons die as the direct result of drinking from these same sewers. The water supply for drinking purposes should be determined by our profession, and such knowledge given our patrons, by daily converse, lectures in public schools, and best of all to thoughtful mothers, as shall compel through public sentiment the supply of pure water for all citizens, however ignorant.

The public are already indifferent as to vaccination for the prevention of small pox, and we should take the greatest pains, in our busiest day, to explain not our own opinion merely, but statistics from whole nations, to show each one's duty in this and like matters, even if there is no

probability of the person concerned being individually exposed to the danger of contagion.

To the end that our state may, if possible, be first to announce the discovery of a possible victory in determining the cure of cancer, I would suggest that our bacteriologists, pathologists, practitioners of internal medicine, surgeons and specialists, each and all devote, during the coming year, special and extended study to this subject.

It is not alone on scientific lines that we should unite, but the esprit de corps should be so cultivated as to make it a fact that an injury or affront to a single member of the profession is to the body corporate.

As we are often told, and more often know, the doctor is not a business man, as the term is applied to financial transactions. Individually or collectively we lack method in securing the money compensation due for services performed. Competition for patronage is so rife among the rank and file, that many physicians purposely allow it to be understood that the patient is not to be asked for a fee, if they do not personally urge an opportunity for tendering it.

Every medical man is proud of his ability to relieve distress as a charity, and no profession responds like our own to such appeals, but we should in justice to our cash patrons, our families and to the impostor himself, join to a man in a federation which will inform every doctor of the name and description of the beat, pretender and sharp, who has the ability to pay the fees of his class, and yet systematically extracts from one doctor after another, time, talent, opinion, night vigils or operations, and manages the many tricks at his command not only to keep the physician from his just fee, but often throws dust in the way of blame or a report of the inefficiency of the doctor, merely as one of the cloaks for his own method of stealing the doctor's income. When such a dead beat knows of the certainty of this published report, in our rogue's gallery, he will pay just fees rather than be exposed.

The harm to reputation, alas, comes not alone from those who are simply trying to escape from paying their just dues, but too often from traitors in our own ranks, men who are envious, who are called in emergency, in the absence of the attending doctor (for this traitor is ever a coward), and begin a flame by a sneer, or open condemnation, which later has compelled tremendous loss of honor and prestige to the entire profession, bitter local animosity, and financial outlay for defence or settlement in the damage suit.

In our Society we should blacklist the unworthy physician, of whatever school, who upholds, fosters or aids, by public testimony or private opinion, the blackmailing procedure known as malpractice suit.

Finally, since before one is a physician, he must be a man or woman, let us remember that hearts should grow warmer toward a good man than a sharp one, that we have to be qualified to touch tender emotions as well as to make microscopical examinations.

That the code of medical ethics depends upon the great Golden Rule; that much of our success and opportunity grows out of the exercise of the kindest qualities of our nature. May this ever be true, and when we end our service here, may it be said of each, as of one of old, "He went about, doing good."

## ORIGINAL ARTICLES.

### ABDOMINAL HYSTERECTOMY IN THE TREATMENT OF MALIGNANT DISEASE OF THE UTERUS.\*

By J. L. ROTHROCK, M. D.,  
St. Paul.

The ideal treatment of malignant disease, in whatever part of the body it may occur, is its early recognition and complete removal, for we now know certainly that it is in all instances at first a local disease which extends from the primary point of involvement to the contiguous and neighboring structures by direct extension and by the lymphatic and blood channels.

Unfortunately, however, many patients only come under observation at a time when extension has taken place and the disease has advanced beyond all possibility of radical operation.

A careful study of malignant disease in its various forms has demonstrated that in many cases by the time a clinical diagnosis is possible the disease has already spread far beyond the including limits of many of the operations formerly advocated and practised.

The tendency in recent years has therefore been to devise operations which would extend hope of radical cure to these unfortunates who in ignorance had unwittingly allowed the elective period for operation to pass by.

In this connection contrast removal of the breast as formerly practised with the complete extirpation now in vogue, which includes not only the involved mammary gland, but the fascia of the pectoral muscles, the chain of lymphatic vessels and glands together with their surrounding structures, following the lymphatic system not only into the axillary space, but even into the subclavicular space and neck, as advocated by Halsted and today practised by most surgeons.

Perhaps in no location have operative procedures, looking to the removal of malignant growths, been so unsatisfactory as when applied to the uterus, and yet next to the breast the uterus is the organ in women most frequently involved. Considering the peculiar anatomical relations of

the uterus, together with the comparative freedom from symptoms which mark the early stages of carcinoma, it is not surprising that only a small proportion of women come under observation of the physician at a period when the disease is still confined within the limit of radical operation.

According to Winter, in Olshausen's clinic a few years ago, only 25 per cent. came under observation early enough to render any hope of permanent cure by radical operation. Within the last few years, since earlier diagnoses are being made and more radical operative procedures practised, this percentage has risen; still it has only reached about forty per cent. of all cases. The reasons for this apparently small percentage are obvious. In many cases the onset is extremely insidious, often entirely wanting in symptoms or accompanied only by such as are attributed to some much less serious trouble. Then, too, many women are so accustomed to bear their ills uncomplainingly that only when the disease begins to make inroads on their general health and strength by the development of cachexia they are induced to seek the advice of a physician. What must then be said of the physician who makes light of these early symptoms and fails to do his duty in not examining every woman who complains of symptoms referable to the uterus?

Another reason is the very prevalent erroneous impression, not altogether confined to the laity I am sorry to say, that the menopause is commonly accompanied by a great variety of symptoms, so that it not infrequently happens that the earlier signs, which point to beginning of carcinoma, are borne with patience and accepted as a matter of fact.

Normally, the menopause is not accompanied by symptoms as hemorrhage or leucorrhœa and when they occur at this period they are indicative of pathological changes, which demand the attention of the physician.

Until about two decades ago, chiefly under the leadership of Marion Sims for the relief of carcinoma of the uterus of the cervix or in case the disease was located in the body of the uterus, removal of as much of the disease as possible was practised, it is needless to say, with but very few permanent cures. But carcinoma was then regarded as an incurable disease. It so happened, however, that a few patients suffered no return, a circumstance to be explained only by the accidental complete removal of the disease. In 1881, Freund proposed total hysterectomy by the abdominal route, but owing to imperfections in technique and no doubt more to the asepsis of that period, the operation was attended by so high a mortality that it never gained favor. Vaginal extirpation, either with clamps or ligatures, then became the operation of choice for

\*Read before the North Dakota Medical Society, May 24, 1899.

complete removal and has continued in favor with most operators until the present time.

There is no question as to its value in selected cases, but that the number to which it can be applied as the ideal operation is not great, is attested by the large number of cases for which it is totally inapplicable and the large number of recurrences following it in the hands of most operators. Of twenty-eight cases so operated upon by Kelly, Russel found twelve recurrences within two years, or forty-five per cent., and this is no doubt a fair example of the experience of others. Indeed, many operators today take a very gloomy view of carcinoma of the uterus and regard vaginal hysterectomy as a procedure affording little relief. The reasons for this poor showing are several. Owing to the anatomical features of the pelvis the confines of the operation must necessarily pass very close to the border line of the normal with diseased tissue, so that no doubt frequently removal is not complete.

Carcinoma of the uterus may have its origin in the portio vaginalis, the cervical canal or the body of the uterus. By far the larger proportion, however, have their origin in the cervix, only from two to four per cent. occurring in the body. The mode of extension as above stated is:

- (a) By direct continuity.
- (b) By the lymphatics (regional infection).
- (c) By the blood vessels (metastasis), occurring in frequency in the order named.

In recent years a careful study of recurring carcinoma, after operation, has given much information concerning the mode of extension. According to the observations of Winter, metastasis to distant organs through the blood vessels is not common and only occurs late in the course of the disease. This is explained by the fact that only after an advanced stage is reached, loosened fragments gain entrance to the blood vessels.

The lymphatic glands, with which the genital lymphatics communicate, are the inguinal, the iliac and the lumbar groups. Those from the cervix terminate in the iliac glands, which in turn communicate with the lumbar groups. Those from the body of the uterus terminate in the iliac and lumbar groups and through the round ligament occasionally communicate with the inguinal as demonstrated by Porier.

With regard to the frequency of lymphatic involvement, there is much difference of opinion. Winter thought that it occurred in about one-third of all cases.

According to Wagner, not all enlarged glands are carcinomatous, but the enlargement may be the result of infection by pathogenic bacteria, especially in case necrosis or ulceration has occurred at the seat of primary involvement. On the other hand, the recent observations of Ries and others go to show that regional infection is

of much more frequent occurrence than was formerly supposed for he found that even though the glands were little or not appreciably enlarged, yet careful microscopical examination revealed foci invasion by cancer cells. In confirmation of the correctness of this view, Gusseubauer examined the neighboring lymphatic glands in 78 cases of carcinoma of the breast, and in only two cases failed to find cancer cells.

According to these observations, therefore, lymphatic involvement plays a very important role and must be taken seriously into consideration as a factor in all operative procedures which have for their aim complete removal of all the disease.

It is at once evident that the vaginal operation will not answer this requirement and we must therefore look to some more radical procedure. With this in view, some years ago Herzfeldt applied Kraske's radical operation for extirpation of carcinoma of the rectum to carcinoma of the uterus. Owing to the high mortality, however, which, according to Westermarck, was for 100 cases twenty-five per cent. and the slow convalescence, during which the patient must lie on one side, this operation has never come into favor in this country though it was practised to some extent in Europe.

In 1895, Ries, of Chicago, proposed an operation by the abdominal route, which had for its aim the overcoming of the failings of other operations. Polk, of New York, and soon after Clark, of Baltimore, proposed and practised methods differing but slightly from that proposed by Ries. The operation, according to Ries, is performed as follows:

Operation: Patient is placed in the Trendelenberg posture and an incision is made through the abdominal wall, from the navel to the pubes. If any adhesions are present they are now liberated. The right ovarian artery is then ligated near the pelvic brim, and, after clamping the proximal side, divided. An incision is now made through the peritoneum over the right common iliac artery at the junction of the external and internal branches. The ureter is now sought and dissected out, following down its course to the broad ligament near the uterus. Then the left side is dealt with in like manner. The bladder is now stripped away from the uterus and a flap of peritoneum is dissected from its posterior surface. Anteriorly the uterine artery and branches will now come into view and can be followed out beyond the ureter and tied there. The freeing of the ureter as it passes through the broad ligament can now be accomplished, and if desirable the greater part of the broad ligament may be dissected out, including any cancerous glands or infiltration which may have taken place, as well as the removal of the iliac glands. The dissection is now carried down to



the vault of the vagina, which, if it is involved in any suspicious or diseased tissue, must be removed.

The lumbar glands must be examined and if enlarged must, of course, be removed. The uterus being removed, the ureters are replaced and the peritoneum stitched over them; the posterior flap of peritoneum removed from the uterus is now sutured to the vesical flap, and the abdomen closed as usual without drainage. This constitutes, in the main, the features of the operation which has been variously modified.

Clark suggests catheterizing the ureters to make them more easily recognizable, but except in a few cases where it is desirable to determine their potency this procedure takes time and does not seem necessary.

Usually the operation is practically bloodless after ligation of the ovarian and uterine arteries, except for a few vaginal and vesical branches, which can readily be controlled. Polk has proposed ligation of the anterior branch of the internal iliac artery as a time saving measure. Prior has, however, shown that that vessel is very frequently anomalous in its course, sometimes not going off the uterine artery. It has even been proposed to ligate the trunk of the internal iliac, a procedure which has been safely carried out in case of inoperable carcinoma. It is important that these procedures be borne in mind for they might at times be of service.

I wish here to report two cases, upon which the radical abdominal operation was performed, drawing conclusions only as to the feasibility of the operation and its range of application rather than as to the ultimate results. I have operated upon two cases by this method, slightly modifying the operation in each case to suit the conditions.

Case I. Mrs. B., aged 31, has one child aged 9. Father died of sarcoma of neck. Mother still living. Has always been in good health until three months before she consulted me. The first symptoms she noticed were leucorrhœa and at times a bloody discharge. She had no pain and her general health was apparently good. She consulted her family physician on account of leucorrhœa when the real nature of her trouble was discovered. There was marked infiltration of both lips by the cervix of a granulating mass, assuming a cauliflower type, which bled on the slightest touch. The clinical diagnosis of carcinoma of the cervix was made, but microscopical examination of an excised portion showed it to be sarcoma.

The operation was performed Jan. 5, 1898, under ether anæsthesia, and the different steps of the operation were carried out as above described, without any difficulty. The ovaries and tubes were removed and owing to the possibility of infiltration of the vagina the upper fourth was removed.

The duration of the operation was two hours and a half. The operation was practically bloodless, and at its conclusion the condition of the patient was very good, there being little or no shock. Convalescence was uneventful, complete and uninterrupted, except for a small stitch abscess in the abdominal wall, which healed promptly.

This patient remained in good health with no return for exactly one year, when she had a recurrence, beginning in the vaginal vault, in the scar of the operation, from which she died within four months. Autopsy could not be secured.

Case II. Mrs. B., widow, aged 42, has had six children. Has always been well until last winter when she had an attack of pneumonia. Present trouble began four months ago with leucorrhœa and foul smelling discharge. Her health had been poor for six months. Examination shows carcinoma growing in the cervix. The whole cervix is infiltrated and the vaginal portion is everted. The carcinomatous mass completely filling the upper portion of the vagina. The new growth is friable and bleeds profusely on the slightest touch. The uterus is fixed and only slightly movable.

The operation was performed May 8, 1898, under ether anæsthesia as above described. Numerous adhesions were encountered and on the right side an old pyosalpinx. The bowel was very firmly adherent in Douglas' cul de sac, and on loosening it the serous coat was torn and immediately repaired. The operation was very difficult, owing to adhesions preventing raising up the uterus. The right broad ligament was infiltrated by an inflammatory mass. The duration of the operation was about three hours, at the conclusion of which the patient's condition was good, there being little or no shock, inasmuch as the operation was practically bloodless. The patient made a good recovery from the immediate effects of the operation. In this case both the iliac and lumbar glands were perceptibly enlarged and were removed and both ureters were dissected out for a space of at least six centimeters. The right ureter it was found impossible to cover over with peritoneum its entire length, on account of lack of peritoneal covering. Convalescence continued uninterrupted for about ten days, when the urine began to escape and it was discovered that the patient had both an ureteral and a vesical fistula, the former from devitalization of the walls of the ureter not being able to cover it with peritoneum, the latter from too close dissection to the bladder with subsequent sloughing.

After about two months the patient began to show signs of a developing ureteritis and a month later it was evident that the infection had reached the kidney.

The patient was then anæsthetized and unfortunately died suddenly from chloroform before the anæsthesia was rightly begun. At the autopsy on opening the abdomen about two feet of the small intestine were found adherent to the scar in the abdominal wall. The spleen was enlarged, soft, friable.

The retroperitoneal glands (lumbar group) were markedly enlarged and quite numerous. The left kidney showed marked chronic interstitial nephritis. It was small and the surface granular. Capsule adherent.

The right kidney was markedly enlarged and on section the pelvis was filled with pus. The cortex was thick and showed foci of beginning suppuration. On the right side, deep down in the pelvis, was found an exudate in which the ends of the ureter were found, it having sloughed at this point. The walls of the ureter were thickened from ureteritis.

The bladder, opposite its attachment to the uterus, contained a fistula two cm. in length, a slough from too close dissection.

The ultimate outcome of these two cases argues little in favor of the operation. But it must be recalled that in case I, sarcoma was being dealt with, which, when it occurs in the uterus, is proverbial for its unfavorable prognosis, recurrence being almost the invariable rule.

I have no apology to offer for case II, except that the old inflammation about the uterus greatly complicated matters and made the operation extremely difficult. The ureteral fistula was unavoidable from the fact that there was not enough peritoneum to cover the ureter. It is a well known fact that the ureter, if not stripped too bare, may be dissected out for several inches of its length without disturbing seriously its blood supply. It must always be carefully replaced and covered with peritoneum and care must be taken not to make too much tension upon it. Failure to bear these peculiarities in mind is bound to be accompanied by misfortune to the patient and even now such sequelæ begin to be reported.

Another very interesting discovery at the autopsy of Case II, was that notwithstanding at the operation the lumbar glands, as many as were enlarged, were removed, still three months later there seemed to be as many enlarged as at the time of the operation.

This raises the question whether in order to remove the group of glands, should not the entire fascia of this region be removed, a procedure which, owing to anatomical relations, would hardly be possible. It does not seem possible to make as wide a dissection in case of carcinoma of the uterus as of the breast for obvious reasons, yet the very poor permanent results from vaginal hysterectomy impel us to cast about for something better. It is still too soon to speak of the

ultimate results which will attend this operation, but it is my wish rather to call attention to its feasibility. In skilled hands the mortality should not rise above ten per cent., and it offers hope of a radical cure to many who could not obtain it by means of the more generally practised vaginal operation. It is probable that the operation will not become popular, as it should only be undertaken in well organized hospitals, where skilled assistants are to be had and no one ought to attempt it without first having made himself familiar with the anatomy by recent dissections of the important structures with which he is about to deal. I have ventured to call attention to this operation, not as applicable to all cases, for in well selected cases the vaginal operation is vastly easier and safer. I believe, however, that a proportion of cases which unfortunately come under observation too late for a safe vaginal operation might still be saved by the more radical abdominal operation, and if this suggestion shall be the means of saving one of these poor unfortunates from a certain and horrible death, I shall feel amply justified in having called attention to the operation.

#### A PLEA FOR BETTER DISINFECTION IN TYPHOID FEVER.\*

By F. B. MINER, A. B., M. D.

Gardner, North Dakota.

For a number of years the question of the cause of typhoid fever has engrossed the attention of many of the leading scientists of our profession. No disease, except perhaps tuberculosis, has had more attention in the laboratory. And still it is not thoroughly settled just what germ produces the disturbances that make up the symptoms of typhoid fever. Eberth's bacillus, the first to receive attention as etiological, is still at the head of all theories on the subject. Yet this germ will not stand the test of the four rules of Koch, as is demanded of all disease germs before being pronounced etiological. Indeed, it does not give a clear record even as to the first rule, for in many otherwise well marked cases of typhoid it has been impossible to discover this particular germ. In very few of the waters that have practically been proven to have caused epidemic typhoid fever has it been possible to isolate the characteristic Eberth bacillus. But in almost every case another, a very closely allied bacillus, has been found. This has been supposed and, indeed, by some practically demonstrated to be the bacterium coli commune. These two germs are at times so nearly alike in their growth that it is with the greatest difficulty that they can be separated upon artificial media.

\*Read before the North Dakota Medical Society, May 24, 1899.

Dr. Victor C. Vaughan, of the University of Michigan, has perhaps done as much work along this line as any other American scientist. In the winter of 1890-91, after completing my regular bacteriological laboratory course, I had the opportunity of working for several weeks with Dr. Vaughan in his private laboratory. He was studying waters from which typhoid was supposed to have originated in epidemic form. In all the waters studied Eberth's bacillus was found by inoculation experiments, but always associated with another bacillus which seemed to be the one that really produced the intestinal lesions, though the Eberth was far more numerous and literally crowded the liver and spleen. Few guinea pigs died as a result of inoculations by pure Eberth cultures, but almost all died promptly after being inoculated with pure cultures of the other germ. His conclusions were that Eberth's, associated with some other germ, was the cause of typhoid. Since then many leading men have held this opinion, and some have modified it by considering the bacterium coli commune frequently, at least, the author of the fever.

But whatever specific germ, if any, is the cause of typhoid, almost the universal opinion is that it is a germ disease, and that the infectious matter is discharged principally with the fæces, sometimes with the urine and sometimes possibly with the vomited matter. That the fæcal matter is charged with specific infection of the disease few will deny. That many epidemics have been caused by the stools of a single patient, washed into springs or streams has been proven repeatedly. Drinking this water is not the only source of danger. Those out of reach of the water may suffer from the use of milk or butter contaminated by it. The recent epidemic in Maidstone, England, was caused by two springs that had been contaminated by typhoid stools thrown near them. The epidemic in 1893, at Montclair, N. J., resulted from typhoid filth contaminating the water in which were washed the milk utensils of a dairy that supplied some forty families. Indeed, few epidemics that have been investigated have failed to show water contamination to be their direct or indirect cause.

But there are doubtless other ways by which typhoid poison is disseminated. Uffelmann found germs in dry earth ten weeks after contamination, and in dry wool six weeks after. This may account for some of the apparently sporadic cases that we sometimes meet. Often the fæcal discharges are thrown on top of the ground where they dry and the germs are blown about with the surface dust, just as are those of tuberculosis, to be taken into the system in various ways, without leaving the least trail behind them.

Typhoid fever has always been very prevalent in this state. Ever since white men have

lived here it has been their dread. Whether the Indian suffered from it before the advent of his white brother, I do not know. But for twenty-five or thirty years there has been a constant and ever increasing flow of specific typhoid poison into our water courses and water supply. Our locality is watered and drained by the Red River of the North and its tributaries. The large part of its scattered population, as well as most of its large towns, are on or near its banks. The great majority of these people draw their whole water supply from this source. What a dangerous necessity this is will appear when we recall that these same streams receive nearly all of the drainage of stables, closets and house slops. And not seldom is it a fact that the drinking water is drawn from the stream below the point where the family filth is drained into it. But it is not only through water from streams that typhoid is disseminated in North Dakota. Even where only artesian water is used I believe that fever is being spread by water contamination. On many farms where there are artesian wells the flow is not great enough to furnish sufficient water for the stock, except as it is allowed to flow into reservoirs and thus the entire flow saved. Ordinarily soft wood is used for these reservoirs and they are sunk beneath the ground to avoid freezing. Many of them are in or near the stables in order to be handy in watering the stock. It is not at all impossible that the soakings from the stables and manure piles can find their way into these tanks, thus forming an ideal medium for the growth of Eberth's bacillus. More easily can we believe in the possibility of typhoid from such a cause if we accept the theory that the bacterium coli commune can produce the disease. Especially when we remember that the hired men on the farms pass their bowels in the barn, and the discharges are thrown out upon the manure pile, there to dry and to be blown about in our gentle North Dakota breezes, or to soak away with the other fluids into the near-by water tanks. We must remember, too, that most of the typhoid cases in the country are among the farm hands and that many of them are lodged in the barn or some near outhouse. The nearest and easiest place to throw their stools is upon the manure pile. In the summer this manure is hauled out upon the land and is often left spread until it is entirely dry. It thus gives up all loose matter in the form of dust to be wafted into our homes, into the milk and water we use, and in various ways to find access to our bodies to produce disease.

The gentlemen of the society will not think for a moment that I am presuming to instruct them along these lines. Every physician in the room is as conversant with the cause and methods of dissemination of typhoid fever as the speaker. These words are a plea for more care among us. The highest duty of every physician is to study

few preliminary remarks, will offer for your consideration the following cases:

Case I. De Lone P., white infant, age six months. Child fleshy, but extremely anæmic. Angioma of the lower lip, involving, as will be seen by the picture, a portion of the cheek and chin; also angioma of the left parotid region and a very small angioma of the left axilla. These growths were congenital but at birth were very small. The mother was advised by her family physician on no account to have operation performed until the child was two years of age. The prognosis was bad. The growth of the left parotid, being most troublesome, and furthest advanced, was removed by Dr. Wheaton. The child lost very little blood, apparently stood the operation well, but refused to respond to stimulation. Died from shock at the end of twenty-four hours. There seems little doubt if this child had been seen early its life could have been saved.

Case II. Tom J. W., age five years. White. American. Large tumor on right side of abdomen extending from right costal ridge to within one inch of crest of the ilium. Tumor was first noticed soon after birth. Parents were advised against operation. Has gained steadily to size seen in picture. Tumor was firmly fixed in abdominal wall, freely movable over the costal cartilages. Tumor removed by Dr. C. A. Wheaton, March 4. Very little hemorrhage; no shock, primary union. Recovery uninterrupted. Stitches removed on the 11th of March.

Case III. Mike C. Age three years. Admitted to City and County Hospital, Dec. 30, 1898. Well developed, fat, plump child. Very pale and anæmic from loss of blood. Was admitted to the hospital immediately after an accident, which was an explosion of the cook stove. The right leg was broken in middle third, both tibia and fibula protruded and extensive laceration across the outer and anterior surface of the leg, wound encircled about half of the leg. All muscles on outer and anterior side of leg were severed. Anterior and tibial peroneal arteries were severed. Child was seen and dressed by the surgeon then on duty. Vessels were tied with cat gut, wound irrigated with 1 to 4,000 bichloride solution; muscles and fascia were sutured with interrupted cat gut, skin with silk worm gut; wet bichloride dressing applied. Plaster of paris cast applied over this. Patient suffered greatly from shock; was given strychnia and nitroglycerine, hypodermatically, during the operation.

On January 1 I saw the child for the first time. His temperature was high. A window was made in the cast and the wound irrigated and redressed. On the following day the cast was removed and a posterior splint was applied;

hot bichloride poultices frequently changed. Until January 12 the wound continued to discharge large quantities of foul pus. The child's general condition, however, seemed to be improved. On January 12, under an anæsthetic, the wound was curetted thoroughly, a large quantity of 1 to 5,000 bichloride was used for irrigation; both bones were wired, muscles and fascia were sutured with figure of eight silk worm gut suture, and a small piece of iodoform gauze was left for drainage; a thoroughly antiseptic dressing, with a plaster cast, was applied. Union of skin and soft parts primary. Cast was changed at intervals up to Feb. 23, when it was removed and bony union was perfect. On March 1 the child was walking. Discharged March 15. Partial anæsthesia on the dorsum of the foot; muscular union somewhat impaired, but bony union perfect. General condition of child perfect.

Case IV. Harold G., referred to me by Dr. W. G. Morley, of St. Paul, Minn. Diagnosis, congenital hernia of the right side. Age 20 months. When first seen by Dr. Morley the hernia could be reduced with anæsthesia. Last two or three times had to give an anæsthetic before the hernia could be reduced. Child was well nourished and strong. Operation, St. Joseph's Hospital, Oct. 28, 1898. Incision over the tumor cut down to the sac. Sac opened and found to contain omentum and a portion of the cæcum and appendix, the latter about five inches long containing several fecal concretions, and its walls thickened, showing evidence of previous inflammation. Appendix ligated at its base, cauterized, stump turned in. Contents of the sac were not adherent. A portion of the omentum was removed and the sac tied off and removed. Considerable difficulty was experienced in finding and isolating the vas deferens. Deep structures brought together with interrupted cat gut sutures. Silk worm gut for skin and fascia, using the Fowler stitch. Plaster of Paris spica bandage applied over a sterile dressing. Anæsthetic, chloroform. The operation was practically Bassini's method. Patient left hospital on fourth day. Recovery uninterrupted. Primary union throughout. At present writing there is no return of hernia.

Case V. Ira P., referred to me by Dr. Chas. Ball, of St. Paul. Age two years. Four days previous to date of operation was brought to Dr. Ball's office with some pain and tenderness in right iliac region. A few days previous to this she had attended a picnic and eaten heartily of popcorn, peanuts and drank pink lemonade, which was followed by acute gastro-intestinal disturbances, pain localizing itself at McBurney's point. At the time of operation there was a well marked tumor at this point. Operation, St.

Luke's Hospital. August 1, 1898. Incision three inches in length was made directly over the fluctuating mass and a large amount of thick, greenish offensive pus, strongly faecal in odor, escaped, apparently coming from the perforated appendix. As the cavity was well walled off, the appendix was not sought for. Packed with iodoform gauze. Anæsthetic, chloroform. Recovery uninterrupted and up to present date has had no further attack of appendicitis.

Case VI. Baby G. White, to all appearances a female infant, well nourished. Twenty-eight days old. Strangulated right inguinal hernia. Case was seen in consultation with Dr. Eshelby, of St. Paul, January 15, 1899. Hernia became strangulated early in the evening. Was seen by Dr. Eshelby at 10 p. m., and attempts were made at reduction by taxis. This failing, the writer was called and operation performed at 1 a. m. Preparations for operation were hurriedly made and it was done by the light of oil lamps in a suburban residence with no assistant except the anæsthetizer who had great difficulty in keeping the baby asleep. Oblique incision was made over the tumor. Sac opened and found to contain a knuckle of small intestine, black, but not gangrenous. After relieving the strangulation, which was at the external ring, the gut was restored to the cavity. At the lower portion of the sac was found a discolored organ, resembling an ovary, firmly adherent, which I attempted to liberate, but as the hemorrhage was quite severe, decided to ligate and remove it. No attempt was made to dissect out the sac. The canal was closed by interrupted cat gut sutures and the overlying structures with interrupted silk worm gut. Dry dressing applied. The shock following that operation was considerable and required hot saline enemata and whiskey for stimulation. Recovery uninterrupted. Child was brought to my office day before yesterday and there was no return of the hernia. Child in perfect health.

So far as I have been able to ascertain this is the youngest case of strangulated hernia operated upon with success on record. Microscopic examination of the specimen taken from the sac of the hernia showed it to be a testicle instead of ovary as was first supposed. The other testis was sought for in the labium, but could not be discovered. The external genitalia, with the exception of very large labia majora, are perfect. I did not probe the depths of the vagina, nor did I attempt to discover whether or not the uterus or ovaries were present.

This case, to me, is one of exceeding interest and is certainly unique. I shall watch the development of this child and perhaps have some further report to make of the case at a later date.

## PROBING THE NASAL DUCT.\*

By J. H. RINDLAUB, M. D.,

Fargo, North Dakota.

A number of years ago, when I was superintendent of schools in a Wisconsin city, it was my custom to go down to the lower grades to see how things were getting along, and occasionally I would propound questions to the little folks in order to cultivate their thinking faculties. I remember one day I asked the youngsters what reasons they could give for the nose being located where it was on the face. I recollect getting all sorts of answers, some of which were intensely amusing. At last, one little girl raised her hand and said, "My mamma goes to the doctor twice a week to get a hole made from her eye down to the nose so the tears won't run over her face, so I guess that's why the nose is where it is in order that the tears may have a place to go."

Sometimes I wonder if some of our physicians give as much thought to the function of the nasal duct as this little child.

In the whole list of cases coming under the oculist's care, there are none in which we have more satisfactory results, and, on the other hand, there are none which try the patience of both patient and physician more than affections of this membranous duct contained in an osseous canal only three-quarters of an inch in length, extending from the lacrymal sac, which is really the dilated upper extremity of the duct, to the inferior meatus of the nose.

Not many years ago eye surgeons failed to appreciate the true etiology of diseases of the duct and gland and were inclined to ignore that part played by the nasal mucous membrane when discussing the pathology of catarrh of the lacrymal sac, dacryocystitis, dacryo-cysto-blenorrhœa, lacrymal fistula, or hydrops of the tear sac, which, you will all agree, are essentially one and the same process.

Infection of the sac and duct by fluids from the conjunctiva has been in my experience very rare unless there has occurred a stoppage in the lower part of the mucous membrane of the duct, which, as you are aware, is continuous with the pituitary lining of the nose.

It is sometimes a difficult matter to decide when the proper occasion has arisen for the use of the probe. Most certainly it should not be used in those cases of epiphoria or dacryo-cystitis following the first attacks of acute rhinitis, because the occlusion is simply transitory, and will usually subside with the improvement of the nasal mucous membrane, and in these cases I never attempt anything in the line of treatment except the employment of anodyne, antiseptic

\*Read before the North Dakota Medical Society, May, 25, 1899.

or astringent solutions, with perhaps slitting the canaliculus or making an incision through the anterior wall of the sac below the internal palpebral ligament in order to allow more thorough cleansing of the sac, being guided in each instance by the severity of the case.

However, in those chronic inflammatory affections which have produced a stricture of the duct, due not only to the engorgement of the submucous plexus, but also to a permanent stenosis from thickening of the periosteum, you have no alternative, in the majority of cases, other than using the probe, and just here arises a question as to the most frequent position of the established stricture. Is it in the upper portion, the lower portion, or are there multiple strictures? It seems to be the consensus of opinion that in long standing cases the last is the rule, yet as regards frequency, authorities claim that the upper extremity is most often the seat of the occlusion.

Although I may be entirely wrong in my deductions, yet since my friend, Dr. Grant, of Akron, Ohio, suggested that I try probing from below, I have come to the conclusion, at least so far as seventy-two of my own recorded cases were concerned, that the stricture is more often in the lower extremity, and, acting upon this idea, I usually reverse the ordinary method of probing from above.

Although the method of entering the probe from below is extremely simple, yet a few words as to the technique may not be out of place. The probes I use were made by myself, but any of the ordinary ones will answer your purpose. After the nasal passage has been cleansed, cocainized, dilated, and illuminated with a strong light from the head mirror, pass the short arm well under the lower turbinal parallel with the floor of the nose so that the point is in close proximity to the opening. Now gradually lower the long arm, and, if the probe has been placed correctly, one can feel it slide into the canal orifice. If unsuccessful the first trial, move the probe gently forward and backward until you get to a point where resistance ceases and the probe enters. Now cautiously push it into the canal as far as possible. No harm can come even with an improperly handled probe, except, perhaps to the canal exit, simply for the reason that there is nothing else here to injure. On two occasions, I have penetrated the antrum, but in these instances my probe slipped in so easily that I came to the conclusion that there was an unnatural opening between these two cavities, for certainly it would require considerable force to penetrate the osseous wall.

I think I do not make a misstatement when I say that many general practitioners hesitate about using this instrument simply for the reason that they feel that they lack the proper amount

of skill and that they are fearful lest they do more harm than good, but I am satisfied that if they will give the method of probing from below a few trials, they will meet with such gratifying results in so many of their cases that they will become enthusiastic supporters of this procedure and will at least deem it worthy of a trial in all cases.

I do not mean to be understood that this method is always easy, or that you will always be successful, by any means, for you will meet obstructions in the upper part of the canal and subjects where it will be impossible to enter the probe satisfactorily from below. In such cases you must enter from above. A hard and fast rule cannot be laid down. Each individual case must be studied by itself. It often requires a deft hand and much experience no matter which extremity we choose.

In those cases where the stricture is so tough, tight and unyielding that it is necessary to divide it with the knife before resorting to the probe, or when considerable force is necessary to effect a passage, it certainly would be preferable to enter from above for several apparent reasons. In instances where the stricture is quite soft, the obstruction caused by tumefaction of the mucous membrane and an excess of mucus rather than a dense fibrous thickening, the writer has found probing from below and syringing from above to give the best results. The size of the probe used is to be the largest that can be passed with ease. This statement, however, is somewhat indefinite, for you may draw your own conclusions when I say that the higher numbers are many times more easily introduced than the lower, and that I have frequently been able to pass one of the larger instruments after I had failed with one several sizes smaller. The above remark as to the diameter of the probe applies no matter how used. Formerly I thought it quite sufficient when I was able to enter with Bowman's number four, and this was the theory taught me by Prof. Fuchs, of Vienna, but the results of my employment of the larger sizes of Theobold's during the past three years have converted me to Johns Hopkins eminent oculist's method, and I do not hesitate to say that in my opinion the day of small probes has passed.

Prof. Theobold's probes and technique are too well known to need description. They can be found depicted in any late text. In brief, his set consists of sixteen, varying from one-fourth of a millimeter up, each successive number being one-fourth of a millimeter thicker, so that number sixteen has a diameter of four millimeters, the smaller ones being made of silver and the larger of aluminum. Preparatory to the introduction, the lower canaliculus is slit well up to the juncture with the sac, after dilating with number one or two. This being accomplished, number five or

to prevent disease rather than to cure it. And while we all know thoroughly the danger of indiscriminately throwing out the fecal and other discharges of typhoid patients with no attempt at disinfection, we sometimes become careless. I have reason to believe that a large part of the typhoid stools in the towns along the Red River are thrown directly into the sewer with little, if any, attempt at disinfection. I have heard of instances of the stools being thrown out upon the manure pile here in the city of Fargo. The public dumping ground for manure seems to be in the very heart of the city, back of the business houses on Front street, upon the bank of a cooley draining, I understand, into the Red River only a few feet from the mouth of the supply pipe of the city water works. Fargo may not suffer greatly from this neglect and oversight, but this poison travels north. Under the ice of winter the oxidizing influence of air and sunlight are lost, and as a result all along the river we have numerous cases of fever during the winter, resulting from drinking this concentrated typhoid extract. I sometimes think that here might be a good beginning for the study of the production of typhoid immunity. For we seldom see cases of fever among those who have lived for a long time upon the river banks. They seem to drink the water with impunity. But newcomers and children are quite generally attacked.

Then the ice supply for those back from the river is derived from this same source, at the time when the poison is most virulent. Thus the germs are carried out over the prairie. Therefore, I wish to enter my plea for a more careful disinfection of the discharges and clothing of typhoid patients. In order to accomplish this we must take upon ourselves additional work, without increased recompense. But we certainly owe it to ourselves as well as to our patrons. It involves a system of education. The masses of the people are ignorant along this line. Many health boards are negligent or ignorant. In this state, in the country districts, they are elected for entirely different business and this is only incidentally their duty. As an instance of learning among these officials, the following is copied verbatim from a board of health report. The advice was lucid, though not couched in perfect English: "Every person who is confined in a house owing to sickness and contagious diseases, should, at all times, be thoroughly covered with disinfectants, both externally and internally, to insure safety to themselves and to others, as in my mind a spread of the same is caused by carelessness on the part of people who know it all, and cannot be told by persons of experience." Perhaps we need not keep our typhoid patients covered, both externally and internally, with disinfectants, but we should certainly use, with a free hand, such disinfectants as have been proven

useful in rendering innocuous the specific poison about the patient, whether found in his discharges or upon his soiled clothing. If greater care were exercised there is no doubt but that, in a very few years, typhoid fever would be much less frequent in our fair young state. Let us, as physicians, see to it that our sanitation is improved now while our population is scattered, before an increased density renders it more necessary and at the same time much more difficult.

#### The William F. Jenks Memorial Prize.—

The fifth triennial prize of five hundred dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on the various manifestations of lithæmia in infancy and childhood, with the etiology and treatment.

The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children;" and that "the Trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said Trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1901, addressed to Richard C. Norris, M. D., Chairman of the William F. Jenks Prize Committee.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

James V. Ingham, M. D.

Secretary of the Trustees.

# NORTHWESTERN LANCET.

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JULY 1, 1899.

## THE MEETING OF THE STATE MEDICAL SOCIETY.

If a large attendance is the criterion of the success of a meeting, then the thirty-first meeting of the Minnesota State Medical Society must be declared the greatest success in the history of the Society. Even on the first day the attendance numbered nearly two hundred, and at the time of election of officers, when there was the greatest number of members present, the seating capacity of the meeting place was overtaxed.

The Society did a good deal of business of various kinds, and although debate upon some of the measures proposed was carried on with a good deal of vigor, there was an entire absence of anything like ill-feeling among the speakers. Always charitable, the Society voted the sum of two hundred dollars out of its small surplus for the benefit of the medical men who suffered loss in the New Richmond cyclone. It spent a good deal of time discussing the form in which its transactions for the present year should be published, and then, as usual, referred the whole matter to the Publication Committee, the only sensible thing to do, since the meeting of the whole Society is no place to discuss the size of volumes, the kinds of binding, the cost of various methods of printing or other matters of the kind, matters which can be rationally considered alone by a committee. The Society also discussed the question of medical legislation in some of its aspects, but this subject, too, was wisely referred back to the Committee on Medical Legislation.

One subject, merely touched upon at this meeting, is by far the most important matter that the Society has to consider at the present time.

It has become plainly evident that some way must be found to put a limit upon the papers and discussions in the various sections. With this end in view, a resolution was passed at the first session, as follows:

"Resolved, That the reading of all papers before the sections be strictly limited to twenty minutes, and the discussion of each member to five minutes; provided that this time limit may be extended to thirty minutes for reading an especially interesting paper, by a motion from any member carried by a majority vote; and further, that no paper be read except by title only whose author is not present to read and defend it, save by a motion and vote as aforesaid." At the last session a similar resolution in the form of an amendment to the by-laws of the Society was offered, but action upon it was deferred until next year because it failed to secure a unanimous vote. The resolution referred to is as follows:

"No. 12 of the by-laws to be amended to read as follows:

"Section a. The chairman of each section shall lay out the plan of its work and shall preside at its meetings.

"Section b. Papers to be read in the sections shall be limited to fifteen minutes in the reading, and no person shall occupy more than five minutes in the discussion, nor speak more than once on a subject. The chairmen of sections shall incorporate this by-law in the invitations to members to write papers for the sections."

Although the plan proposed in this amendment would undoubtedly help relieve the congestion that prevails in some of the sections, it is far from an entirely effective measure. To show that it is wanting, it is only necessary to apply the amendment as a remedy to the meeting under discussion. There were on the program of the last meeting no less than sixty-six papers. The total number of hours provided for the sections was fourteen. Allow fifteen minutes for the reading of each paper and five minutes for its discussion, and three papers could be disposed of in an hour, or forty-two in the whole time, that is less than two-thirds of the number contributed this year. It is evident that some remedy more effective than this must be found if the trouble is to be radically cured.

The Wisconsin State Medical Society has been wrestling with this problem, and at its



meeting last year adopted resolutions as follows:

"Resolved, That it is the sense of the Wisconsin State Medical Society that the scientific program be restricted to a number of papers not to exceed fifty for any one meeting.

"That the Program Committee be instructed hereafter to accept not to exceed fifty papers for any one meeting of the Society, one-half to be read by invitation, one-half by volunteers.

"That the officers of each section are hereby directed to invite members of the society to contribute papers to be known as Papers by Invitation, the titles of which are to be submitted according to previous usage, but which may or may not be submitted for approval, at the discretion of the Program Committee, until the date of the meeting, and other papers to be known as 'Volunteer Papers' which may be offered by any member of the society.

"That the Program Committee is hereby directed to receive these volunteer papers, which are to be in the hands of the chairman of the Program Committee four weeks before the meeting, to be examined by him and the members of the Program Committee, and to be accepted or rejected according to their merits.

"That the officers of the sections are directed to appoint one or more members to open the discussion on each paper."

Another clause in the resolutions apportions the fifty papers among the sections according to the amount of business done in past years, medicine and surgery being allotted eight papers each, while the sections on materia medica, state medicine, and pathology are allowed but two papers apiece. It is further provided that the volunteer papers shall be sent unsigned to the secretary, accompanied by a sealed envelope containing the name of the writer and a motto, which motto is also to appear on the corresponding paper. The secretary is allowed to take no part in the decision as to the acceptance of the papers.

There is a good deal of merit in this plan, and the members of the Minnesota State Society will do well to think it over during the coming year and compare it with the plan embodied in the amendment to the by-laws that will come up for a vote at the next meeting. An objection to limiting the number of papers has always been that it would cut off many members from writ-

ing and offering papers because they did not happen to be invited to do so. Under the Wisconsin plan all are invited to write and are assured of a fair competition, with the certainty that their contributions will at least have a place in the transactions in their published form. The probabilities that a particular paper will be read will be about the same as at present, when there is time for but about half the papers in the most popular sections, while the less popular sections are often crowded out altogether.

Of the other matters brought before the Society a few words will suffice. The proposed effort to increase the membership of the Society should be heartily seconded by all. It has been left to a committee to report next year upon the advisability of the Society's publishing its own medical journal. This is a large question which may be discussed later in these columns. It was voted that in future the Society furnish its own banquets, tickets to be purchased by those members who wish to attend. There is nothing, however, to prevent the Society from accepting any hospitality which may be offered to it in the future.

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## BOOK NOTICES.

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Atlas of Diseases of the Skin. By Prof. Dr. Franz Mrazek. Edited by Henry W. Stelwagon, M. D., Ph. D., Clinical Professor of Dermatology, Jefferson Medical College, Philadelphia; etc. Illustrated. Phila. W. B. Saunders, 1899. [Price, \$3.50, cloth, net].

It goes without saying that while illustrations are an addition and embellishment to any medical work, they are absolutely indispensable to a treatise on diseases of the skin. The plates in this volume of the Hand Atlases are remarkably good and the clear and concise descriptions of the text make the whole volume a most useful one in the study of skin diseases.

A Review of Recent Legal Decisions Affecting Physicians, Dentists, Druggists and the Public Health. By W. A. Purrington, of the New York Bar, Counsel of the Dental Society of the State of New York, and Lecturer on Medical and Dental Jurisprudence in the New York College of Dentistry; etc. New York. E. B. Treat, 1899.

It is a matter of importance for every medical man to know about the rulings of courts upon medico-legal matters, and in this little book will be found information about recent decisions with regard to infringements of medical practice acts,

the duties and responsibilities of surgeons and of accoucheurs, the extent to which communications made to physicians are privileged, and many other topics of a kindred nature. Frequent reference is made to the case of *Moratzsky vs. Wirth*, a case well known in Ramsey county, where it was vigorously fought up and down the courts for a period of several years.

*An Epitome of the History of Medicine.* By Roswell Park, A. M., M. D., Professor of Surgery in the Medical Department of the University of Buffalo; etc. Second edition. Illustrated. Phila., New York, Chicago. The F. A. Davis Company, 1899. [Price, extra cloth, \$2.00, net].

The demand for a second edition of a book first published only a year ago, is a most convincing demonstration of its popularity. One would scarcely have ventured to predict a great demand for a work upon the history of medicine, a topic that seems scarcely practical enough to attract the average physician, who is above all other things, a practical man. And yet, as was pointed out in the notice of the first edition of Dr. Park's book in these columns, the history of medicine has an intensely practical side when viewed in the proper light, and furnishes most valuable information for the guidance of the man of today, enabling him to avoid many pitfalls into which the uninstructed would be sure to stumble.

*The Medical Complications, Accidents and Sequelæ of Typhoid or Enteric Fever.* By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; etc. Illustrated. Phila. Lea Brothers and Co., 1899. [Price, cloth, \$2.40, net.]

There is no disease whose wide distribution and importance better warrants the writing of a monograph than does typhoid fever. No part of the civilized globe is free from its ravages; even here in the Northwest, where the comparative freedom from zymotic diseases is a boast, typhoid sometimes and in some localities becomes a veritable plague. Indeed, in the early autumn months it usually heads the death list of the cities.

To the general practitioner, then, too much cannot be said upon the subject of typhoid fever, especially when what is said comes from so reliable a source as the author of the well known text-books on therapeutics and diagnosis. It has been given to but few men as young as Dr. Hare to be accorded so respectful a hearing when they speak upon subjects connected with general medicine.

The plan of the work is to discuss first the general considerations about the disease, and then to go on to the onset, the well-developed

stage and the period of convalescence, taking up particularly the complications that occur at each of these periods. This forms the main bulk of the book, the remaining chapters being devoted to a consideration of the diseases most frequently confounded with typhoid, with a few words about the duration of the disease and about the matter of immunity from second attacks. The whole concludes with a chapter on the mental disturbances following typhoid, written by Dr. F. X. Dercum, professor of diseases of the nervous system in Jefferson Medical College.

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## MISCELLANY.

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### MUSHROOM POISONING.

Dr. Wm. M. Strubble, of Trenton, N. J., describes in the *Medical News* eight cases of mushroom poisoning in a family who bought the fungi from a farmer. Three of the cases resulted fatally. Dr. Strubble, after narrating the cases, goes on to say:

It will be seen from a comparison of these cases that the symptoms of poisoning were in all practically the same, viz.: A painless vomiting, coming on from nine to eighteen hours after the ingestion of the poison, which was very free and consisted of mucus and water. This was very evidently a centric vomiting, due to stimulation of the vomiting center in the medulla after absorption, as none of the symptoms seemed to be caused by the local effect of the fungus, there being no symptoms of irritation of the gastrointestinal mucosa. The burning and dryness in the mouth, pharynx, and œsophagus, were considered due to the atropin given. This vomiting continued for a number of hours, when heart weakness or depression began, with a resultant coldness of the surface. This heart depression was relieved in five cases by hypodermics of atropin and strychnin, but in three cases, while there was a response at first, later the patients died from heart failure, being cold and pulseless for some hours before death. With this cardiac depression there began a serous diarrhœa. The movements, while frequent, were small in amount, and the condition did not seem to be severe enough to cause the intense, and in three of the cases, fatal cardiac depression. It would seem that there was a simultaneous intestinal vasomotor paralysis, thus causing a serous leaking into the intestinal cavity. With this there was no sweating, showing no involvement of the cutaneous vasomotor system. In some instances the patients complained of the frequency of bowel movements, but nothing was given to stop this action, it being considered Nature's effort to rid the system of the poison, and was encouraged by salines, castor oil, and

rectal injections. In no case were there any cerebral symptoms, or coma, as described as occurring in muscarine poisoning.

Mr. V. K. Chesnut, of the United States Agricultural Department, Washington, D. C., and Mr. E. B. Sterling, of this city, induced the man who sold the toadstools to this family to take them to the same spot and gather some more specimens of the same variety. These specimens were also picked out from a number of other species by members of the family, thus doubly identifying the cause of the poisoning. This was the *Amanita phalloides*, or death-cup. Most cases of toadstool poisoning are due to the *amanita*. There are a number of varieties of this fungus, but only three or four are poisonous. There are two prominent poisonous varieties found here, the *Amanita muscaria*, or fly *amanita*, and the *Amanita phalloides*. The active principle of *Amanita muscaria* is muscarine, and the symptoms of its poisoning as given in Potter's "Materia Medica" are as follows:

"Muscarine is a powerful respiratory and cardiac depressant, paralyzing the respiratory center and arresting the heart in diastole by paralyzing its motor ganglia while stimulating its inhibitory apparatus. It lowers the arterial tension, produces profound salivation, lachrymation, and sweating, contracts the pulmonary vessels, causing intense dyspnoea, and increases the intestinal, hepatic, and pancreatic secretions, and markedly diminishes the renal. It causes tetanic intestinal contractions, severe colic and purging, spasm of accommodation, and contraction of the pupil. It acts as an intoxicant on the cerebrum, producing vertigo, delirium, followed by sopor, with lowered reflexes, perhaps coma, and death."

It will be noticed that atropin is almost an exact physiological antagonist to muscarine in its effects on the heart, muscular spasms, sweating, salivation, pupil, and renal secretion, and may be considered a typical antidote.

The symptoms of poisoning by *Amanita muscaria*, as described by Dr. D. W. Prentis of Washington, D. C., are as follows: "Symptoms usually begin in fifteen minutes to two hours after injection of the fungus: Colic, more or less violent, vomiting, diarrhoea, contracted pupil, salivation, profuse sweating. With these are cerebral symptoms; the patient feels as if drunk and becomes violently excited; dimness of vision which may be followed by blindness; epileptoid convulsions and trismus; drowsiness with loss of reflexes; pulse slow and thread-like; respiration short and stertorous; death from progressive loss of heart power."

It will be seen that these symptoms do not at all correspond to those in the cases described, which, as they were so uniform in all the eight cases, may be taken as typical of *Amanita phalloides* poisoning, unless the fungi eaten were con-

taminated by other varieties, which, from the statements of the family does not seem likely. The cerebral effects, the salivation, sweating, and colic were all absent in these cases, and this seems to show that the poison is different in the two varieties and not the same, as is claimed by some.

Mr. V. K. Chesnut affirms that the poison of *A. phalloides* is not muscarine but a toxalbumen called phallin. He considers the symptoms of poisoning "due to a decomposition of the blood, the serum escaping from the blood vessels into the alimentary canal, the whole system being rapidly drained of its vitality," and he gives the symptoms of phallin poisoning as abdominal pain, cramps, convulsions, and other tetanic spasms; pulse weak; nausea, vomiting, extreme diarrhoea, rice-water discharges simulating cholera, and death from general asthenia. These cramps of the legs and other convulsive symptoms may be due to the rapid drain of the fluids of the blood, and the symptoms present a typical picture of cholera, apparently due to an irritant or poison causing a vasomotor paralysis along the alimentary canal and a consequent pouring out of serum. My patients did not have this appearance; there was none of the sunken eyes, hollow temples, pinched nose, or the appearance as given by Tyson of "a wasted body, long immersed in the pickling-vat of a dissecting room." In other words, my patients died from a failure of the heart and not from a draining away of the liquids of the body.

Again, as to the statement of decomposition of the corpuscles of the blood. As a typical disease in which this occurs may be mentioned yellow fever. Here the symptoms referable to this lesion—decomposition of the blood-corpuscles—are jaundice, black vomit, black and offensive stools, bleeding from the gums and mucous surfaces, and hæmaturia, these symptoms being due to the escape of the altered hæmoglobin. None of my patients presented any of these symptoms, and it would seem as if a different poison had been described. The symptoms given by Mr. Chesnut so closely resembled those caused by muscarine that it would seem as if that action had been described and not the effects of *Amanita phalloides*.

In looking back over these cases the following points in regard to treatment suggest themselves to me: Having a history of *Amanita phalloides* poisoning (and the length of time before the beginning of the symptoms would almost diagnose the variety of the fungus) at once an attempt should be made toward free evacuation of the poison. Tannic acid as a chemical antidote is of no use. Vomiting should be encouraged until the stomach is empty, and the bowels should be cleaned out. This seemed impossible in my cases as the vomiting was so severe. Rectal injections do not reach high enough but should

be urged. If I had another case I would put two or three drops of croton-oil on the tongue at the risk of increasing the irritation as the effects of the poison are so severe and so fatal; or hypodermic injections of magnesium sulphate may be tried in order to prevent any further absorption of the poison. Having accomplished this, morphin for the vomiting, strychnin and atropin to stimulate the heart, with possibly galvanism of the cervical sympathetic, and large subcutaneous injections of normal salt solution should be given.

#### CLOSURE OF THE ABDOMINAL INCISION AFTER LAPAROTOMY AND THE TENDENCY TO HERNIA.

In the course of time, abdominal operators have reached a proficiency in technique and an assurance in the application of the details of asepsis that have made laparotomy a comparatively facile and safe procedure. There has, however, remained an objection not foreseen at first, but ever becoming more insistently prominent as the number of abdominal operations increased. Despite the most anxious care and most solicitous technique ventral herniæ occur at the site of the abdominal incision and often make life miserable for the patient. The frequency of the occurrence of hernia has become one of the great sources of opprobrium to modern abdominal surgery and it is not unusual to have patients who do not fear the result of the operation itself, hesitate to undergo it because of the fear of the subsequent hernia that they have learned to dread from the experience of friends or acquaintances.

The review of the recent results of post-operational hernia, by Dr. John G. Clark, of Johns Hopkins Hospital, in the recent number of *Progressive Medicine*, shows that a number of factors which have usually been considered as influencing the production of hernia, really have no ætiological connection with it. For instance, permitting the patients to get up after 17 to 18 days does not predispose to hernia and keeping them in bed for longer periods does not prove a prophylactic against its occurrence. The wearing or failure to wear a bandage after operation does not affect the liability to hernia, either favorably or unfavorably. Pregnancy following immediately or remotely after operation plays no part in the production of hernia, despite preconceived notions to the contrary.

It is evident, then, that the occurrence of ventral hernia after operation is mainly due to the method of closing the abdominal wound, despite all that has been said by certain gynaecologists abroad as to the advantage to be derived in this matter from making the incision through the rectus muscle. Dr. Clark, from his experience at John Hopkins, as well as his records of the subject, decides in favor of the incision in the

linea alba. Two things are necessary to lessen the tendency to hernia in closing the incision. First the fascia, i. e., the aponeurosis of the recti muscles, must be carefully brought together so as to secure complete and firm continuous union along the line of section. The essential point in placing the sutures is to catch enough of the aponeurosis to firmly bring the borders of the fascia not only into complete coaptation but also to slightly elevate them into a median ridge. The coaptation of the fascia must be especially exact at the lower end of the incision, where the liability to hernia is greater because the layers of fascia are fewer.

The second requisite for a firm cicatrix is to secure healing per primam, and this is best secured by leaving no dead spaces in which blood or lymph may collect to become infected, and by allowing no penetrating cutaneous stitches through which microorganisms may penetrate from the surface despite the most careful precautions. On the whole, this subject of the avoidance of hernia by a careful technique in the closure of the abdominal incision would seem to have reached a development that leaves very little to be desired, and it is evident that it is only in patients with especially relaxed tissues or with natural tendencies to hernia that the operator may feel exempt from responsibility in future cases of this annoying sequela.

#### WABASHA COUNTY MEDICAL SOCIETY.

The next annual meeting of the Wabasha County Medical Society will be held at Plainview, Minn., Thursday, July 13, beginning at 11 a. m.

The following program has been prepared:

1. Paper (subject not announced) by Dr. W. T. Adams, Elgin.
2. Paper on "Treatment of Inflammation of the Urethra" by Dr. Geo. R. Patton, Lake City.
3. Paper on "Diagnosis and Treatment of Chronic Interstitial Nephritis," by Dr. Christopher Graham, Rochester.
4. Brief Reports, as follows:
  - (a). Observations made in Chicago and Philadelphia, by Dr. J. C. Adams, Lake City.
  - (b). Proceedings of the American Medical Association at Columbus, by Dr. L. E. Claydon, Mazeppa.
  - (c). Some Chicago Methods, by Dr. W. F. Wilson, Lake City.
5. Paper on "Chronic Gastritis," by Dr. J. A. Slocumb, Plainview.
6. Paper on "Catarrhal Pneumonia," by Dr. E. H. Bayley, Lake City.
7. Transaction of business.

A large attendance is invited.

W. F. Wilson, Sec.  
Lake City, Minn.

## NOTES.

### Imitation Discouraged.

The California Fig Syrup Co. has just obtained a permanent decision in the United States Circuit Court, against Clinton E. Worden & Co., of San Francisco, a large non-secret manufacturing concern, who are permanently enjoined from using the name Syrup of Figs or Fig Syrup, as the name of a laxative medicine which they manufacture, and required to pay costs and account to California Fig Syrup Co. for sales of the imitation.

This latest decision of the U. S. Circuit Court fully sustains the company's claims to the use of the name, Syrup of Figs or Fig Syrup, as applied to a laxative medicine, and establishes the fact that the company is fully entitled to, and will receive, the protection of the Courts, in the suits which we are bringing against manufacturers of imitations. The suit has been hotly and ably contested for two years past, by special counsel employed by the defendants for that purpose.

The evidence fully established the facts that Fig Syrup is an excellent laxative; that it has been extensively advertised; that it has acquired a valuable reputation under the name Syrup of Figs or Fig Syrup, and the manufacturers are justly entitled to protection against other manufacturers who wish to trade on the reputation of this remedy, by applying the same name to the laxative medicines which they manufacture.

### Solar Heat.

Direct exposure to the sun's rays; employment in or living in hot and poorly ventilated offices, workshops or rooms, are among the most prolific causes of headache in summer-time, as well as of heat exhaustion and sun-stroke. For these headaches and for the nausea which often accompanies them, antikamnia will be found to afford prompt relief and can be safely given. Insomnia from solar heat is readily overcome by one or two five grain antikamnia tablets at supper time, and again before retiring. If these conditions are partly dependent upon a disordered stomach, two five grain antikamnia tablets with fifteen or twenty drops of aromatic spirits of ammonia, well diluted, are advisable. For the pain following sun or heat-stroke, antikamnia in doses of one or two tablets every two or three hours will produce the ease and rest necessary to complete recovery. As a preventive of and cure for nausea while traveling by railroad or steamboat, and for genuine "mal de mer" or sea sickness, antikamnia is unsurpassed and is recom-

mended by the Surgeons of The White Star, Cunard and American Steamship Lines.

### An Important Observation.

Prof. Burney Yeo, of London, states in his latest work on Clinical Therapeutics that many of the common forms of diarrhœa are accompanied by excessive acidity of the intestinal contents, and that they may be promptly cured by antacid remedies without the use of astringents.

These forms of diarrhœa are associated with the growth and multiplication of microorganisms which induce intestinal fermentation and consequent local irritation from decomposing food products.

The therapeutic indications in these cases are clear, viz; check intestinal fermentation, neutralize acidity, and overcome the existing atonicity and catarrhal inflammation of the intestinal mucous membrane. Lauder Brunton speaks highly of the value of glycerine as an intestinal antiseptic. In combination with digestive tonic alteratives and antacids, as it is in Gray's Glycerine Tonic Comp., it fulfills all the existing indications, and, moreover, promotes the digestion and assimilation of food so that the normal nutritive processes are speedily re-established. It is of peculiar value in diarrhœa occurring in people of impaired vitality as it not only cures the intestinal disturbances but it also restores tone to the enfeebled system. Gray's Glycerine Tonic Comp. is manufactured only by The Purdue Frederick Co., of No. 15 Murray street, New York.

### Substitution.

In some instances where physicians have failed to secure the expected results from the use of Tongaline, it has been found that the genuine preparation was not dispensed and that the patients had been given a worthless substitute.

It is a practical impossibility to successfully make a substitute for Tongaline on account of the rare and expensive character of some of the ingredients, which precludes their use unless imported direct and in large quantities or made especially for the purpose.

Furthermore any attempt by a pharmacist to hastily compound a substitute for Tongaline, even if he had in stock every ingredient, must necessarily be futile because of the improved apparatus and methods which are absolutely necessary in manufacturing the genuine article.

Every physician should therefore endeavor to protect himself and his patients by prescribing Tongaline in original packages or see to it that his prescriptions are dispensed by honest and reliable druggists.

### A Useful Present.

W. R. Warner & Co., of Philadelphia, New York and Chicago, are distributing free to doctors and druggists, a very complete list of drugs, giving apothecary and metric doses. They are arranged in convenient columns and printed on coated linen cloth size 22x14 for hanging at the prescription counter or in the doctor's office for ready reference. It will be sent to any doctor or druggist upon request. Drop them a postal for it.

### Benzosol in Diseases of the Respiratory Apparatus.

By Mark W. Peyser, M. D.,  
Richmond, Va.

Lecturer on Physiology, University College of Medicine; Secretary Richmond Academy of Medicine and Surgery.

The remedy which is brought to your notice tonight is a combination of guaiacol and benzoic acid—the benzoate of guaiacol—sometimes called benzoyl-guaiacol. It is a synthetic product of the respiratory apparatus, and would say that and, of course, related to creosote, is a crystalline powder insoluble in water, but readily soluble in chloroform, ether and hot alcohol. Decomposition of the drug occurs in the stomach partially, but chiefly in the small intestine, therefore its use in diarrhoea; but I desire to direct your attention to its use in some of the affections losing flesh. She was given ten capsules, each containing five grains of Benzosol, and within twenty-four hours cough had entirely disappeared, nor has it ever returned.

Case II.—Sallie H., house girl, age 25 years, of delicate physique, stated that during the night before consulting me she had been kept awake by constant coughing. Her talk with me was been coughing for two weeks, and was rapidly I am delighted at having found an agent upon which I can with almost perfect satisfaction depend in the treatment of chronic bronchitis.

Case I.—Jennie T., house girl, age 19, had years, had for a couple of years or more suffered relief ensued in twelve hours.

Case III.—Joseph Q., railroad man, age 36 constantly interrupted for the same reason. She was treated in a manner similar to Case I, but from constant pain in the right side of the chest, which was accompanied by a hacking cough. Benzosol in five grain capsules, one every three hours, was administered, resulting in entire relief within a week.

Case V.—Charlie D., age two years, delicate from birth. When six months old I attended him in an attack of capillary bronchitis that came very near to putting an end to his existence. Despite strictest hygienic precautions and various remedies, as emulsions of cod liver oil, and petroleum, tonics, etc., he had numerous at-

tacks of bronchitis, not again, however, of the capillary form. Finally, in one seizure, he was given Benzosol in one grain doses, a dose every three hours. This relieved more promptly and effectively than any remedy that had been employed, and it seems also to have counteracted, in a great measure, the bronchitis tendency.

### Sterilization of Milk.

In these days, when artificial feeding has come to be such an important study, and when the cause of the stomach and bowel affections which occur in early life is so well understood, the sterilization on milk has become a necessity.



There are different opinions held by members of the medical profession as to the best temperature at which to sterilize milk, etc., some claiming that the boiling

point induces chemical changes which do not favor a condition of perfect nutrition, and advocating a lower temperature, while others adhere to the theory that safety lies in the employment of a temperature of 212 degrees.

To meet these varying requirements, the Arnold Steam Sterilizer is constructed so that they can be used either for high temperature—sterilizing, or low temperature—pasteurizing. This is effected by perforating the inner cover so that leaving off the hood, allows sufficient steam to escape to reduce the temperature to 160 or 170 degrees, Fahrenheit, while putting the hood on raises the temperature to 212 degrees.

Full particulars in regard to Arnold Sterilizers, together with valuable formulæ for infant feeding will be sent to any physician by Wilmot Castle & Co., 115 Elm Street, Rochester, New York.

### Sanmetto and Substitutes.

I have used Sanmetto, also substitutes, but must say Sanmetto is the only remedy where it is indicated. It is all claimed for it. I use it every day.

G. A. Smith, M. D.

Henton, Ill.

Dr. Hildebrandt asserts that orthoform causes to cease completely the violent pain due to inflammation of the pulp of a decayed tooth. He introduces into the cavity of the tooth a plug of cotton steeped in an alcoholic solution of orthoform. The pain instantly disappears, and for a considerable time. Orthoform constitutes in such cases a simple remedy, and one which the patient can apply himself without danger.

## ORIGINAL ARTICLES.

## MODERN VETERINARY PRACTICE.\*

BY M. H. REYNOLDS, M. D., V. M.,

Minneapolis.

It is not my intention to argue that young men should study veterinary medicine in preference to other professions. Some young men are especially adapted for the practice of law, others for the practice of human medicine and still others for the practice of veterinary medicine, and every young man should take up the profession which he conscientiously believes to be the one in which he can do the greatest good for society as a body, and himself as a unit. I beg leave to explain one other point in connection with this paper, viz: that I have preferred to use common terms whenever the technical term was strictly veterinary and would not be well understood by a majority of physicians in human practice.

Young men are occasionally deterred from the study of veterinary medicine by a fear that they would not be so highly thought of in the community as if they studied human medicine or law or theology.

I became convinced years ago that regardless of profession or business, providing it is an honorable one, men are usually given about the social rank and recognition that they deserve. If a lawyer or physician is uncultured in speech and ungentlemanly in manner he is ranked as a boor, regardless of the fact that he is a member of a highly honored profession. If a veterinarian is well educated and a gentleman he is recognized as such. I know plenty of veterinarians in this state who are so recognized and treated, and I am personally acquainted with veterinarians all over the United States who are recognized as scholarly gentlemen.

## VETERINARY EDUCATION.

In 1890 the two years' course was common all over the United States and Canada. There were but few exceptions. The change to a three year course was so rapidly made during the early nineties that within a few years there were but two veterinary schools of any prominence in the United States or Canada that granted diplomas at the completion of a two years' course. I can best illustrate veterinary education in America by taking one of our good schools and discussing the course of study and facilities of the institution. The youngest veterinary college of any

prominence in America is the New York State Veterinary College at Cornell University, New York. On the faculty list of this institution occur such names as Pres. Schurman, of the University; Dr. James Law, famous alike in America and Europe as a practitioner, student and author; Dr. W. L. Williams, one of the most prominent members of the American Veterinary Medical Association, and well known throughout the United States and Canada; and Dr. W. A. Moore, whose work as bacteriologist in the study of hog cholera has made him famous. This institution is located at Ithaca on the campus of Cornell University. The buildings which belong exclusively to this institution are seven in number. I fancy that many of the medical men attending this association meeting would be surprised if they were to visit the amphitheater operating room, and note every convenience and apertenance that goes with modern surgery; or the dissecting rooms and note the precautions that have been taken to secure all the desirable features which belong to a modern dissecting room; or the hospital and note how perfectly the conditions meet the requirements, for instance in the infectious disease ward; or the pathological and bacteriological laboratories and note the splendid equipment.

Candidates for admission into this school must possess the preliminary education represented by a course requiring at least forty-eight regents' counts in a registered academy or high school, or a preliminary education that will be accepted by the regents as fully equivalent. The regents will accept as equivalent a "baccalaureate degree from the academic department of any college or university of recognized standing." There are several equivalents which will be accepted; but they all require that the students shall come to this institution thoroughly prepared. I think the entrance examinations would satisfy the most fastidious committee on medical intelligence and education.

During the first year the students take up inorganic chemistry, anatomy, microscopy and histology, embryology, comparative physiology, breeds and breeding, dissection and the usual laboratory work; second year: organic and physiological chemistry, anatomy, comparative physiology, therapeutics, medicine, surgery, obstetrics, jurisprudence, sanitary science, bacteriology, the usual clinics, dissection and laboratory work; third year: medicine, clinics in medicine and surgery, surgery, zootechnics, toxicology, sanitary science, pathology, meat inspection, research work and thesis.

In addition to our colleges there are other important factors to be considered in connection

\*Read in the Section of Medical Education, Jurisprudence and State Medicine of the Minnesota State Medical Society, June 21, 1899.

with modern veterinary education. Nearly every state in the union having within her borders a reasonable number of veterinarians, has state and local veterinary associations which meet regularly and discuss professional matters just as do similar associations of physicians. For 35 years we have had a national association. Last year we decided to enlarge and the name was changed from the United States Veterinary Medical Association to the American Veterinary Medical Association. None but graduates of colleges which furnish satisfactory courses of at least three years are eligible to membership.

Our current literature is abundant.

But after the young man has finished the high school, academic or collegiate course and then this prescribed veterinary course and graduated, what does the world offer him? What business prospects or what opportunities to gain reputation are there to justify the time and expense involved? It is not my intention to paint the prospects for a young veterinarian in untrue colors, for every intelligent veterinarian and stockman knows that veterinary practice during the past few years of depreciation in live stock values, has not been extremely attractive; but the stockmen themselves, the business men in our great cities and possibly my medical brethren have suffered something from this same condition. There is a veterinarian in Chicago whose income from actual practice is variously estimated at from \$40,000 to \$60,000 a year. I am told by good authority that his cash collections in 1898 amounted to \$44,000. A private veterinarian's practice right here in Minneapolis during more prosperous years was actually worth from \$10,000 to \$13,000 for years in succession. Another practice in St. Paul netted nearly as much.

The present ratio is three farm animals to each human being and less than one veterinarian for each ten physicians. The live stock valuation in the United States is estimated at \$2,000,000,000. Two hundred and fifty millions dollars' worth of live stock is sold annually in Chicago. I give these figures to illustrate possibilities, not for the purpose of giving an impression that veterinary practice is a universal bonanza, for there are plenty of practitioners in veterinary as in human medicine who can scarcely keep their laundry bills paid.

The Government Bureau of Animal Industry is now offering positions for veterinarians as meat and live stock inspectors at the great slaughter houses and ports of entry or shipment. Bureau inspectors must be graduates of recognized veterinary colleges. It has been so ordered by Congress. The government is already employing a large number of trained veterinarians in these capacities and this work has only begun. To illustrate the development of this field it is only necessary to bear in mind that

the increase of meat inspection alone was from less than 4,000,000 animals in 1892 to 26,500,000 in 1897. In 1898 there were over 51,000,000 animals inspected ante mortem, and over 30,000,000 animals inspected post mortem.

In nearly every state and territory there is a position for a state or territorial veterinarian or an officer with equivalent duties, and a number of deputies. Many of our large cities have city veterinarians in constant employ. There are places in our agricultural colleges and experiment stations for veterinarians who have a taste for work as teachers and experimenters.

#### VETERINARY SANITATION.

Recently the bacteriology of pleuro-pneumonia has been cleared up by the discovery of a microbe so minute that our most perfect microscopes are unable to define it for the observer. Competent bacteriologists pronounce the work in this case as free from flaws and there is apparently no reason why we should not accept it. If the specific germ of one disease is too minute for microscopic study, there may be many others. There are several diseases of domestic animals, the specific cause of which has persistently eluded the bacteriologists and it is possible that in this we have an explanation. New methods of bacteriological work may now solve these hitherto impossible problems.

#### TEXAS FEVER.

The history of Texas fever presents another triumph. It has been but a few years since the origin and nature of this disease was a mystery. It is difficult to give a definite idea of the seriousness of this disease. Practically all of the cattle in the United States, south of a certain line, are either affected by it or have been rendered immune by infection while young. Southern cattle could not be shipped north for pasturage or market except during cold months. Northern cattle could not be shipped south for the purpose of improving southern stock without almost complete loss. Great business interests were constantly disturbed and the loss to both southern and northern states was serious. We now have the etiology of this disease before us, as an open book. It has been proven very conclusively that the disease is transmitted in nature invariably by inoculation and the inoculation is done only by one species of the tick (*boophilus bovis*). Southern cattle free from living ticks can therefore be shipped north without danger. Government veterinarians have been experimenting for some time with various dips for destroying the ticks so as to remove the last obstacle to the movement of southern cattle northward at all seasons of the year. Not only that, but it is now quite apparent that young cattle may be immunized and be safely shipped into the Southern states. This means the possibility of improving the Southern cattle,



and you are doubtless aware of the immense cattle interests of the South, particularly of Texas and Southwestern Louisiana.

#### BOVINE TUBERCULOSIS.

The problem of tuberculosis in the human family and among domestic animals is perhaps the largest, and it may prove the most difficult problem which medical men have ever been compelled to face. Dubard's discovery of tuberculosis in fish has been such a revelation that it is unsafe to even speculate concerning the limitations of this disease. Here we have a bacillus, varieties of which can exist in different animal bodies through a range of temperature of from 50 degrees F. in carp to 135 degrees F. in birds. Are there varieties of the bacillus of tuberculosis which are capable of altering from one to the other? Competent research work seems to indicate that this may be the case. If this bacillus can gradually adapt itself so as to thrive in a variety of animal bodies, whose normal temperatures vary from 50 degrees F. to 130° or over, then the possibilities as to distribution and saprophytic existence of this microorganism are almost bewildering.

Sanitarians in the field of veterinary medicine have taken hold of the problem, large as it is, and considerable has already been accomplished. But a few years have passed since we had the first positive information as to the specific nature of the disease. We now have a diagnostic test for the presence of this disease which is as nearly infallible as any method of diagnosis in the whole realm of medicine. It gives us positive evidence as to the presence of the disease, even when the lesions are very recent or slight in extent; and so far as known the errors that may be charged to tuberculin are nearly or quite all in cases that can be diagnosed on clinical evidence without the aid of tuberculin. Wide spread interest in bovine tuberculosis has been aroused. Cattle breeders and dairymen are becoming informed as to the nature and extent of the disease. The views of breeders, especially, have changed very much during the past few years. When tuberculin first informed us that a serious percentage of highly bred cattle was tuberculous it naturally aroused the opposition of breeders and owners. But as it became more and more evident that their cattle were actually diseased and that tuberculin was an accurate test as to the presence or absence of the disease, the more intelligent breeders naturally came over, and it is now safe to say that there are comparatively few cattle breeders in the United States or Canada who do not believe that bovine tuberculosis is seriously prevalent and that tuberculin is an accurate diagnostic. It is becoming rather common for breeders to purchase stock subject to test or with certificate of test. It is no longer necessary to found

a herd of pure bred stock with tuberculous animals, and it is possible with the aid of tuberculin to free a herd from this disease. In view of recent work that has been done in Denmark and Germany and by experimenters in this country, it is very evident that it is not only practical but possible to breed tuberculosis out of a herd. This is based upon the demonstrated fact that a very large percentage of healthy calves can be reared from tuberculous dams, providing the calves are removed from the mothers soon after birth and reared upon the milk of healthy cows or upon the sterilized milk of the dams. It seems to be a fairly well demonstrated fact that tuberculous cows with diseased udders are apt to give infectious milk and that tuberculous cows with apparently sound udders may give such milk. It is now quite generally recognized that dairymen should not be permitted to sell milk which comes from untested cows for any city food supply, although comparatively few cities are making the tuberculin test a condition for issuance of license. Minneapolis was the pioneer in this and deserves great credit.

St. Paul has recently adopted an ordinance somewhat similar to the one in force in Minneapolis, and the work for that city will soon be well under way.

Chicago papers are discussing the matter. The veterinarians and physicians of that city are planning a joint meeting in the near future to consider it. There is every reason to hope that a dairy inspection, which will involve the tuberculin test, will soon be in force in the great city of Chicago. Other cities will undoubtedly follow.

Permit me to explain the stand that has been taken concerning bovine tuberculosis in Minnesota State Board of Health work:

1st. That it is not practical under present conditions to insist upon an immediate tuberculin test of all cattle in the state.

2nd. Whenever undoubted tuberculosis appears in a herd or any animal that has come from a given herd, that herd must be tested with tuberculin.

3rd. Animals that react to the tuberculin test may either be immediately killed or continued under quarantine for a period not to exceed three months, at the end of which period they must be retested. If they react on second test, they must be killed under inspection within one month from date of second test. The State Board furnishes tuberculin free of expense. During the period of quarantine the sale of milk or other food products from quarantined animals is forbidden.

Symptomatic anthrax, commonly called black-leg, can now be prevented with almost absolute certainty by vaccination, the vaccine costing only about fifteen cents per head. Losses

from this disease in the past, even in Minnesota, have been very serious. Further south and on the range country to the west the loss from this disease has been very heavy.

The same may be said of anthrax proper. Its bacteriology and general pathology are now well understood. We have a vaccine in quite common use that is very satisfactory as a preventive.

#### HOG CHOLERA.

It is safe to insist that during the present decade Minnesota has lost over a million dollars from hog cholera in one year. Iowa has lost several millions per year for several years in succession. The financial losses in Nebraska and other states have been enormous. The Bureau of Animal Industry, or, in other words, the Veterinary Division of the Department of Agriculture, has now developed a vaccine which has apparently shown 80 per cent of recoveries in hogs vaccinated, as against 20 per cent for hogs not vaccinated. It is being gradually recognized that with thorough organization hog cholera can be quarantined successfully, providing the quarantine measures are instituted early in the history of the outbreak, and even when the disease has spread over a large territory, a well organized effort, backed by a good law, can accomplish a great deal toward gradual reduction and final eradication of the disease. Now that we apparently have a preventive vaccine, the problem of control looks still easier. To illustrate what can be accomplished, I have only to quote a few facts and figures from Minnesota records; and, by the way, Minnesota can claim the distinction of having been the first state to attempt the control of this disease by sanitary measures. In 1896 this state lost over a million dollars in dead hogs alone, saying nothing of other financial losses that necessarily accompany the loss of so much live stock. In 1897 the loss, as nearly as can be estimated, was less than one-half a million. In 1898 a similar estimate had placed the loss at less than one-third of a million, approximately \$325,000. The reduction of territory invaded was from 354 townships invaded in 41 counties in 1897 to 93 townships in 32 counties in 1898. This has not been entirely due to natural conditions, for our neighboring states, Iowa, Nebraska and Wisconsin, report no reduction, and in some cases an increased annual loss during the same period.

We have in mallein a positive diagnostic for glanders, and it has revealed an unpleasant fact, viz: that glanders is more prevalent than we had previously supposed. The public idea of a dejected looking horse that is discharging profusely at both nostrils, with great ulcers on the Schneiderian membrane and farcy sores on the body surface, is in some respects unfortunate, for it is difficult to get people to comprehend that a

horse may be fat and show no marked symptoms of glanders and yet have the disease, and be infectious to other horses.

#### SURGERY.

There are several operations commonly done by surgeons in human practice that we make no attempt to perform. Our patients rarely, if ever, have appendicitis, and the removal of this organ in the horse or cow would be a rather formidable operation, inasmuch as the equine appendix is about three feet long, with a capacity of seven and a half gallons. The cow has an appendix that measures about seven feet. It is scarcely possible in general practice to furnish ideal conditions during operation, and we cannot control our patients to the same extent after the operation.

Operations are usually performed as a matter of business as far as the owner is concerned. Sentiment does not play so important a part, but, after all, we have reason to be fairly well pleased with the veterinary operative surgery of today. An accurate knowledge of anatomy enables us to use cocaine as an aid in the diagnosis of obscure lameness. If we anæsthetize the sensory nerve supply to a certain muscle or ligament or an entire articulation, and the horse, which previously went lame, afterwards goes sound, we have fairly satisfactory proof as to the exact location of the injury. To illustrate: a patient recently came to the University Veterinary Hospital with a badly swollen ankle and a history of injury while training on the track several years ago. Examination easily demonstrated that trouble at the ankle was responsible for some of the lameness, but upon further examination I found an unusually bad case of thrush, and, while considering the advisability of a certain operation for relief, the question arose as to what part, if any, of the lameness was due to thrush. I cocaineized the posterior digital nerves just below the ankle and noticed that the horse continued to go lame as before. I then cocaineized the plantar nerves just above the ankle, and in from twelve to fifteen minutes the horse was apparently free from lameness. I had then located the trouble causing lameness. Veterinary surgeons are now doing quite a long list of neurectomies for the relief of lameness and the results are very satisfactory on accurately diagnosed and well selected cases. We are cutting the median nerve on the upper third of the radius for the relief of lameness of the back tendons, ring bones and various foot troubles; cutting the plantar nerves, one or both, just above the ankle for ring bones, navicular disease, corns, etc.; the digital nerves just below the ankle chiefly for navicular disease. We do neurectomies of the anterior and posterior tibial nerves, external saphenous and musculocutaneous, for the relief of spavin and other forms of lameness in the posterior limb. We

divide the motor branch from the eleventh cranial nerve to the sterno-maxillaris muscle, and the bellies of the sterno-hyoid and omo-hyoid muscles to prevent a horse from cribbing and cure the habit. The cunean branch of the flexor metatarsus tendon is frequently divided for the relief of spavin lameness. We have a new operation, arytenoideraphy which is probably superior to the old arytenectomy for the relief of what is commonly termed roaring. We now drain the gutteral pouches, which in the horse are large expansions of the Eustachian tube, either by operating through the pharynx from within or by introducing a catheter through the nostril instead of the old hyovertebrotony. Laparotomies are fairly common; for instance, in cryptorchid castration, ovariectomies, removal of foreign bodies from the alimentary canal, and volvuli.

Until recently, parturient apoplexy, commonly known as milk fever, was one of those diseases which every veterinarian was anxious to avoid. A call to attend a case of parturient apoplexy was very much like a call to attend a funeral. We now have a treatment that is apparently specific, based upon the theory that the whole train of peculiar symptoms is brought about by absorption of toxic matters from the interior of the mammary glands. This treatment consists essentially in the injection of an aqueous solution of potassium iodide into the milk ducts. Care is taken to do the operation with as thorough surgical cleanliness as possible.

We can now administer a cathartic and thoroughly evacuate the alimentary canal in twenty-five to thirty minutes by the hypodermic or intratracheal use of eserine sulphate, either alone or in combination with atropia or strychnin.

I have discussed veterinary education, veterinary sanitation, a few operations from the domain of surgery, and a few points in disease and treatment work, to illustrate something of what the modern veterinarian is doing. If the gentlemen of this association have gained new ideas concerning veterinary practice, or a broader interest in the great field of comparative medicine, I am content.

### SURGICAL TREATMENT OF STRABISMUS AND HETEROPHORIA, WITH REPORT OF 67 CASES.\*

BY H. A. BEAUDOUX, M. D.,

Fargo, North Dakota.

Since the first inauguration of the surgical treatment of strabismus almost sixty years ago, the therapy of this affection has not remained stationary. Following the myotomies of Dieffenbach came the tenotomies of Graefe. This important step was soon followed by the muscular advancements of Guerin, and although it has

taken almost up to the present time to perfect the operation, it is today one of our most popular ones. Not only have we perfected the old technique, but we have had new ones proposed and adopted.

But operative procedure does not wholly comprise the treatment of strabismus, for experience has taught that a certain number of cases suffering from the condition are not operative cases and must be classed under the name of functional. The converging strabismus of the young hyperope will at times be cured by proper optical treatment assisted by atropia.

This optical treatment, so well perfected by Javal and Landolt, would be too long for me to dwell upon in this paper. Suffice to say that a certain number of cases, small it is true, are cured by it alone, and that it is a strong agent in maintaining the results obtained by operative measures, and that for these reasons a careful study of strabismic cases should be made before plunging in any kind of treatment, especially surgical, for sad may be the surgeon when he finds, after a brilliant operation, that his patient now suffers from diplopia, is unable to rotate the eyeballs, or has been suffering from a displaced macula rather than a true strabismic condition.

With these preliminary remarks we are now able to take up the principal operations for the relief of strabismus, such as tenotomies, muscular and capsular advancements and conjunctivo-capsular sutures, and to give the reasons which prompt us in our selection, be it a single operation or two combined with each other to complete more fully the result sought for.

The tenotomy of eye muscles is an operation much abused today, and is often done without any knowledge or thought of the ultimate result. Sectioning the tendon from its attachment is indeed worthy of the name of tenotomy, but this alone is very insufficient often to obtain the correction of the strabismus present.

A tenotomy should be done with a thorough anatomical knowledge of the eye and orbit and a view to vary approximately its effect, and this can only be done by bearing in mind that the freeing of the capsule of Tenon is wholly responsible for this.

Beginning with the conjunctival incisions it can be made in two ways, horizontal or vertical; the former preferable when the number of degrees of deviation is small, not requiring any freeing of the capsule; on the contrary, the latter, when we are dealing with a case where the regulation of the correction will depend on the amount of capsule disengaged to increase the effect of the tenotomy.

The dissection of the conjunctiva towards the caruncula also increases the effect of the tenotomy, and it should be avoided, unless needed to aid in setting back the muscle, for it has been

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proven, especially when the conjunctiva was sectioned with the expectation to correct an over effect of the operation, that it no longer controlled it as before, when it had not been detached from the external surface of the muscle and its capsule.

While it has been predicted by De Wecker that upon the capsule our surgical effects would be wholly directed, the time has not yet come, and tenotomy, combined or single, forms the bulk of our surgical procedures. Let us now see which conditions require simple tenotomy.

The muscular insufficiency so frequent among myopes gives us frequently the opportunity to tenotomize. The external recti are weakened, but the dread of diplopia stimulates convergence. The adductors struggling to maintain binocular vision make repeated efforts and thus produce what is called muscular asthenopia, with its train of symptoms. At times these efforts are powerless and the eye deviates periodically and soon we have a divergent strabismus permanently established. Once confronted by this condition tenotomy alone will not suffice, but will have to be combined with capsular advancement. To prevent such disastrous outcome the use of prisms should first be resorted to, unless the number required is so great as to necessitate too heavy a lense; then only should tenotomy be performed. To insure relief of the asthenopic symptoms it should be done early on myopes, as often the results are unsatisfactory if the operation is made after the appearance of strabismus.

The second class of cases upon which tenotomy is performed is that of the concomitant strabismus. The tenotomy may be total or partial, and the result is based upon our knowledge of associated movements of the eyes and the amount of innervation sent to the muscles controlling the parallelism of the visual lines. It is in these cases that bilateral tenotomy is truly indicated and where it gives us the best results. Partial tenotomy which means to spare a few central fibres of the tendon is, in my mind, unnecessary, since a tenotomy pure and simple, and by that I mean an incision of the tendon without disturbing its capsule more than the division of its insertion necessitates, can be graduated from  $0^{\circ}$ - $18^{\circ}$  and often not over  $15^{\circ}$ .

Tenotomy of the superior and inferior recti, although less frequent, is performed to remedy ocular palsies.

These tenotomies are often unsatisfactory from the point of view of binocular vision, because the tenotomy of the antagonizing muscle develops an asthenopia superior to that of the paralyzed muscle, so it is preferable to divide the same muscle in the opposite eye.

This choice will be more easily appreciated if it is recalled that vertical deviation, even very small, leads to diplo-

pia, and, unlike the diplopia produced by the internal and external recti, is difficult to correct with prisms because of the small neutralizing power possessed by the superior and inferior muscles. Having sectioned the muscle of the healthy eye, half of the field of vision will be exempt from diplopia; as to the other half, the patient soon learns to correct it greatly by inclining the head in the opposite direction. A tenotomy will occasionally correct a deviation of ten to twelve degrees in convergent strabismus of the paralytic variety, but ordinarily the surgical treatment is secondary to the medical treatment of the cause, and its failure.

To close these brief remarks on tenotomies, let me say that a correction of from fifteen to eighteen degrees for the interni and ten to twelve degrees for the externi is all that can be expected, so that if actual perimetric measurement of the deviation proves to be more than these figures indicate, it will be necessary to resort to means which facilitate the increase of the correction, either by pulling the eyeball in an opposite direction to the action of the tenotomized muscle, or by strengthening the action of its antagonist.

Formerly the aim was to weaken the eye muscles, while today it is chiefly to strengthen them, and capsular advancements as well as muscular are wholly responsible for this accomplishment.

The names of Graefe, Guerin, De Wecker, Critchett and Kalt figure prominently among the early advocates of these two operations. We owe much to De Wecker for his untiring effort in perfecting his technique.

As the name implies, muscular advancement is to bring the insertion of the muscle toward the corneal margin. This can be done with or without tenotomy of the antagonist.

Time will not allow me to enter into the different methods and modifications of the operation; and yet I wish to mention here for those not familiar with eye work the essential points to make a muscular advancement successful.

Having prepared the eye for the operation, a conjunctival flap, wide enough to expose the whole tendinous part of the muscle, is made; and this flap may be crescentic or simply raised as a right triangle, the hypotenuse of which will be its point of attachment. The tendon is dissected from its environment and divided at its insertion. It may be held with De Wecker's hook or forceps made for that purpose. This should not be forgotten to avoid retraction of the muscle and a tedious search for it. After having secured the muscle by inserting a silk ligature armed with two needles from above downward, the ends are made to come out at the upper and lower corneal junction, respectively, so as to embrace the episcleral tissue, these ends are tied together and the muscle brought forward carefully.

Some operators remove a flap of conjunctival tissue of two millimeters, so as to assist the tendinous advancement when it is brought together and prevent tearing the suture. I have generally removed all episcleral tissue over the surface where the tendon was to be grafted, believing that this facilitated the union. One thing I am disposed to believe, and that is, that in case an over correction has been obtained it will be easier to loosen the new insertion to secure a sliding back, so to speak, of the muscle; this being quite difficult even at best and requiring some practice and experience.

To obtain a satisfactory result it is well to have a few degrees of over correction, as there always will be a certain amount of shrinking.

Agnew, of New York, has proposed a resection of the tendon in cases where simple advancement and tenotomy would not suffice. The writer has never performed the operation, having had no cases requiring it, and personally cannot speak with enthusiasm about it. It is being done, however, and I have had several satisfactory reports from surgeons who had performed it quite a large number of times.

The patient should be put to bed, both eyes being bandaged, and requested to keep the eyes quiet for four to five days when the suture will, in the majority of cases, be ready for removal. I have kept them in for as many as twelve days where the operation had been performed on muscular individuals.

The action of muscular advancement is, as has been seen, purely dynamic, since it simply increases the action of that particular muscle. Combined with tenotomy, it is more than dynamic, it is mechanical by favoring the sliding back of the tenotomized muscle. This is a brief exposé of this important subject, and yet I must leave it now to take up and discuss the value and benefit secured by its "first cousin," i. e., capsular advancement.

Like members of the same family, it has some common features. Its purpose is to carry towards the cornea the capsular insertion of the muscle. This assumption is based upon the principle that the globe of the eye can be displaced by making traction on the capsule.

It was in 1889 that De Wecker for the first time described his method of proceeding and gave his reasons for claiming its results. In his mind it was an operation which was to displace muscular advancement because of its simplicity, rapidity and safety. Briefly stated, it consists in removing a conjunctival flap of about four to five millimeters, then in buttonholing the capsule near the tendinous insertion, freeing it above the muscle and laterally, and sliding it forward where it is sutured to the conjunctiva, the amount of the effect produced being regulated

by the size of the opening made in the capsule and the amount of the freeing laterally as well as the amount taken up by the suture.

Here, as in a method described under muscular advancement, the flap of conjunctiva assists to maintain the position of the suture, also avoiding a fold of tissue near the corneal margin.

Practiced alone, capsular advancement has been recommended to replace the tenotomy in case of muscular insufficiency. This has always seemed to me a doubtful proposition, while combined with tenotomy I have repeatedly performed it with satisfaction. Like muscular advancement, its action is both dynamic and mechanical. It regulates the action of the tenotomy and strengthens it by this same process. Several ophthalmologists have proposed to modify the operation either by taking up the muscle in the sutures, or by placing the sutures differently, but all these changes have been of no real value as far as practical results were concerned, and often a detriment to the operation. De Wecker has himself been unable to improve his original operation, at least the changes are insignificant.

Capsular advancement must remain an advancement of the capsule pure and simple, and the idea of combining it with muscular advancement without detaching the tendinous insertion should be rejected as proven by the experiments of Kalt. As it may be seen, muscular advancement and capsular advancement have much analogy. Their aim is the same: to act upon the antagonist of the deviating muscle and to give it strength by bringing its insertion toward the cornea. This result is obtained with muscular advancement by carrying the tendon forward, while in capsular advancement it is the insertion of the capsule that is alone advanced.

These details differentiate the two operations. They have their true importance, since it is upon them that is founded the value of each mode of operating. Is this value the same? Let us see. You will remember that it has been said that any advancement was necessarily capsulo-muscular. Then when the muscle is advanced, the capsule is also advanced, and the two advantages are united. Undoubtedly this is true, but it has been clinically demonstrated that the new tendinous insertion is wholly dependent upon the capsule, and that the result will be identically the same should the intended union of the tendon fail to take place. If this be true, and if the capsule must be included in the sutures lest they cut through the tissue, then why not operate upon the capsule alone? Kalt, as mentioned before, condemns the idea of passing the suture in the tendon when making a capsular advancement, because it generally cuts through.

Concerning the closing of the operations, it is equally as easy in one as in the other, and its amount varies from a few degrees to 70°. I am

and have been for the past two years inclined to favor the operation of capsular advancement:

1st. Because as much correction can be obtained by it as in muscular advancement.

2nd. It is an operation more easily and quickly done, it is less painful, and does not require a general anæsthetic.

3rd. The muscle is not weakened, and the operation does not run the post operation risk of a muscular advancement.

The worse fear, and it is mutual to both operations, is that the muscular action will be the same as before.

Having spoken of the conditions which called for muscular advancement, I will now take up those where preferably and necessarily capsular advancement is indicated.

The first condition to be mentioned is insufficiency of the internal recti as found so often in myopes. True enough, muscular advancement gives good results before the strabismus has become permanent, and if we recall, it has been stated that simple tenotomy, much simpler, gives in these cases equal satisfaction and therefore is preferable. But when the muscle has completely given up its function, then the operation is one that will restore its lost action. It is then that capsular advancement will alone correct the deviation. The following case will exemplify this:

J. O., age twenty-three, has for some years had a divergent strabismus. Deviation is  $35^\circ$ . Operated upon July 16, 1898. Diplopia present for eight days, when sutures are removed. Diplopia disappears. Patient discharged and seen December 12. The eye is straight and convergence good. Patient had been refracted and is wearing correction with comfort.

Capsular advancement can also be combined with tenotomy in divergent strabismus, when the case is one of long standing where the internal rectus has become atrophied, and by virtue of that fact we have a greatly diminished power of adduction.

Again, in cases of secondary strabismus, we find capsular advancement combined with tenotomy, not only an operation of choice, but often a necessary one.

I have during the past year had occasion to perform it twice in cases which had been tenotomized from one to three years before, resulting in a strabismus in the opposite direction. In one of these cases it would have been indeed a tedious task to hunt the tenotomized muscle, and it could not have been done without endangering the safety of the eye. Therefore, in such cases it becomes necessary to do a capsular advancement, and it is fortunate that we have it to do. Both of these cases made a perfect recovery and abduct and adduct with ease and satisfaction.

In cases of trauma and burns, although these conditions are not frequent, capsular advance-

ment, simple or combined, will help in correcting such conditions as result from careless surgery.

Deviations having a paralytic origin are not always operable, for instance, those occurring during the course of tabes, rheumatism and syphilis. The treatment in these cases must be etiological rather than surgical, and they generally are cured by such methods; nevertheless, there is a certain group of cases which should be operated upon, not to cure the paralysis, but to correct the annoying diplopia or the deformity. A simple tenotomy may do it, but often the action of the antagonist will have to be modified and capsular advancement should preferably be the operation chosen.

It may seem as if I had dwelt at great length upon an operation which has perhaps not been so popular, certainly not so much talked of, as muscular advancement, and have in this paper almost overshadowed it. It is not that I wish to discourage that operation, for it has many eminent advocates, but it seems plausible that if we can replace it and get results as satisfactory with a much simpler and less severe operation, that we should not hesitate to do so. This has been my experience, and thus far I cannot regret that I have adopted it. Even in esophoria, rather than to tenotomize the internal rectus, whereby I would leave a small cicatrix in the tissue, I have preferred to advance the capsule over the external rectus where the cicatrix would be hidden in the conjunctival fold. Sometimes I did not correct all the deviation but corrected enough to get rid of the symptoms, and that is the essential.

Before closing I wish to say a word concerning conjunctivo-capsular sutures. They are to assist in the regulation of the tenotomy and to keep the eye in perfect position until the new insertion has taken place, rather than to exert any influence on the deviation of itself. They are like the plaster cast which holds the foot in position after the tenotomy of the tendo Achillis. As it will be understood, it is practised on the side of the antagonist, acting only on the conjunctiva and the capsule to bring the eye away from the deviating side as far as necessary, simply by tightening and tying the ends.

These sutures, of course, are useless in divergent strabismus, as in these cases we are dealing mostly with secondary strabismus, paralytic or following muscular insufficiencies, and here as we have seen before, to weaken the muscular action does not suffice, but we must strengthen the antagonist as well.

Neither will the sutures be indicated in convergent strabismus of more than  $40^\circ$  to  $45^\circ$ , for in such instances a tenotomy which would correct such deviation would in most instances give

us a projecting eyeball, a condition certainly to be avoided.

My 67 cases comprise 33 cases of the strabismic variety, and 34 heterophorias, mainly esophorias. Of the 33 cases above mentioned and tabulated since I gave preference to capsular advancement, 11 were convergent strabismus, 13 concomitant, 7 divergent and 2 hyperphorias.

In two of the cases the stitches broke, the result after the first operation being negative. This was due to the fact that I included muscular fibres in my sutures. I give preference to muscular advancement in myopic cases having an accompanying esophoria.

### VENTRO-SUSPENSION OF THE UTERUS.\*

BY AUG. EGGERS, M. D.,

Grand Forks, North Dakota.

In presenting this paper to the society I have been prompted by a desire to hear this subject discussed, as it is a very important one, and one which cannot be said to be completely settled yet beyond question, either in regard to its indications or in regard to its technique. It is a subject whose importance will be apparent to every doctor here who has had opportunities to observe what a disproportionately large number of women in this western country are suffering from retro-displacements of the uterus, a fact which is explained by the hardships of the majority of women out here preventing them from taking proper care of themselves after their confinement, resulting in subinvolution of the uterus and relaxation of the pelvic floor and the uterine ligaments.

Although some voices have been lifted to the contrary, still I think we may consider it proved, beyond all doubt, that retro-displacement in the great majority of women will tend to bring on all kinds of nervous symptoms and gradually but surely ruin their health—and we will often observe a remarkable improvement in the health of those chronic sufferers by inserting a small, well fitting retroversion pessary, which will keep the uterus in moderate anteversion, thereby relieving congestion, subinvolution and dragging on the appendages and round and broad ligaments.

Taking, therefore, into consideration how large a percentage of our clientele is made up of women suffering more or less from the effects of retro-displacement of the uterus, it is not to be wondered at that we often will be confronted by the question, what operation shall we advise those patients, when we cannot give them relief by fitting a pessary, or when the uterus is firmly bound down by adhesions or prolapsed?

A number of different operations have been advised and actually performed for these condi-

tions; some of these are so unsurgical in their principle and technique, that the mere reading of their description is enough to discard them; others have been proved by the later results to be unreliable or unjustifiable; in short, it strikes one as if human ingenuity has been to a large extent untimely wasted on this subject, and that the best thing to do is not even to waste any more words on some of those operations.

There are only three operations at the present time which need to be thought of and discussed at all, and those are: shortening of the round ligaments, either extraperitoneal (Alexander's operation) or intraperitoneal (Wylie's operation), and ventro-suspension.

I will, in this paper, only dwell on ventro-suspension and will only mention the other two operations in comparing their indications with those of ventro-suspension.

There has been a good deal of controversy in regard to what anatomical parts should be attached to the abdominal wall: the round ligaments have been used by some operators; Kelly first used the utero-ovarian ligaments, but uses now the posterior part of the fundus and the upper part of the posterior wall of the uterus; others use the anterior part of the fundus and the upper part of the anterior wall, others the fundus alone. Some include all the structure of the abdominal wall in the sutures; others include only the peritoneum. Almost all kinds of suture material have been used, and the sutures have been either left buried or removed.

I think it may be safely said that all these different opinions, thanks to the work of Dr. Kelly, show more and more a tendency to crystallize around his technique, viz: to use buried silk sutures, attaching the posterior aspect of the fundus and the upper part of the posterior surface of the corpus uteri to the peritoneum—although Dr. Charles Noble, of Philadelphia, has pointed out that from an obstetrical point of view it will be better to attach the upper part of the anterior surface, as then both fundus, the posterior wall and the lateral walls of the uterus would be available to develop with and accommodate the growing ovum. The other structures of the abdominal wall are to be closed by separate sutures, thereby leaving the peritoneum comparatively loose and easily detachable from the rest of the abdominal wall. As far as the technique of the operation itself is concerned, it is so extensively and accurately described in Dr. Kelly's work on operative gynæcology, that it will only be to waste your time to take that up here.

Like all new operations this operation has been very violently attacked. A very severe judgment has been passed by some who carry their scepticism so far as to say, that since the gynæcologists of the nineties have proven that many of the teachings and theories of the gynæcologists of the sixties were wrong, then per analogy the

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gynæcologists of the present time are also wrong, and shall not perform operations based upon theories which posterity will prove to be wrong. This kind of criticism may, I presume, be safely passed by. There is enough to take up anyway. It has been urged that this operation establishes a most unnatural condition by fixing the uterus in front, and that an adherent, anteverted uterus is the cause of just as much distress and suffering as an adherent retroverted uterus. Why, nobody has ever denied that ventro-suspension establishes an abnormal condition, although it is by no means so abnormal as considered by some, since Dr. H. Kelly's researches have shown that the adhesions formed by his methods will gradually stretch and leave the uterus quite movable and in an easy anteversion and anteflexion; but admitted that it is abnormal, the fact that we cannot obtain the ideal, viz.: to keep the uterus in the correct position and at the same time freely movable, is certainly no reason why we should not be satisfied with something less ideal, as long as it is a material improvement on the patient's previous condition. And those who are so severe in their criticisms as to say that the operation is "anatomically and physiologically unsound," what better measures have they to give us in place of this operation in the severe cases of adherent retro-displaced, or completely prolapsed uterus? They can shorten the round ligaments easily enough, but they cannot shorten the sacro-uterine ligaments; they can repair a torn peritoneum and relaxed vaginal outlet, but they cannot by any operation give back to the broad ligaments, to the vaginal walls, and to the pelvic floor the elasticity and tonus of which the twisting and the dragging of the retro-displaced or prolapsed uterus has deprived them. Let us just as well admit that we have to be satisfied with something below par, and that our aim will not be to try to obtain the anatomical and physiological ideal, as much as to obtain a condition which will give the patient the greatest relief with the smallest chance for relapse.

As far as the other postulate is concerned, viz.: that a uterus fixed in anteversion to the abdominal wall causes just as much distress and nervous irritability as a retro-displaced uterus, this has certainly not been proven to be so by experience. One woman on whom I performed ventro-suspension in December last year for a complete prolapse and who had a very large uterus, which had been in complete prolapse outside the vagina in retroflexion for eight years, has had no distressing symptoms since the operation, and need not make her water as often as before. Another woman on whom I performed ventro-suspension on the twenty-third of February this year for a retroflexed, adherent uterus, complicated with an ovarian cyst of the size of a large goose egg, had for several years been troubled

with frequent micturition sometimes every hour, headache, despondency and mental dullness, which symptoms were not due to irritation from her ovarian tumor, because that tumor did not exist, when I examined her a year and a half before. All those symptoms disappeared completely after ventro-suspension according to Kelly's method and she informed me a few days ago that she could hold her water the whole day if she wanted to. By vaginal examination ten weeks after the operation the uterus was found in moderate anteversion and anteflexion, and considerably movable. Others' experiences go in the same direction, viz.: that after using Kelly's method of ventro-suspension there is no danger of trouble from the bladder or any distressing symptoms from the nervous system as in retroflexion.

The objection that ventro-suspension is too serious an operation, as it necessitates the opening of the abdomen, shoots beyond the mark, if the operation is limited only to cases complicated with adhesions, as the abdomen has to be opened anyway to loosen the adhesion, or if to cases of complete prolapse, where the condition certainly is serious enough to justify opening the abdomen.

The only valid objection then which remains is that ventro-suspension might cause trouble in future pregnancies, and here is the pivot on which hinges the justification of the operation in cases where one or both ovaries are retained, and consequently future pregnancies possible.

Reasoning in abstracto without paying attention to statistics or experience, it is impossible to conceive how a normal pregnancy and labor would be possible if the uterus is firmly and unyieldingly attached to the anterior wall. During the hypertrophy of the uterus to accommodate the growing ovum, the anterior wall, if the upper part of the anterior wall and fundus are adherent, or both the fundus and the anterior wall, if the fundus and upper part of the posterior wall are attached, will very soon fill up the small space between the point of fixation and the symphysis: to gain further room for hypertrophy it must push the cervix towards the sacrum or even up in the abdomen, and when the limit for space is reached in that direction it must double up and form a thick lump of muscular tissue, obstructing the entrance of the pelvis. The ovum will develop in the direction of the least resistance, bulging out the posterior wall, which alone will form the uterine sack for the ovum. When labor comes on the contraction of the anterior wall of the uterus will have no expelling effect at all, as the fœtus will be lying outside its reach: the posterior wall alone has to expel the fœtus, but owing to its dilatation and thinness its contractile power is small. At the same time the resistance against expulsion will be increased by



the narrowing of the pelvic inlet by the hypertrophied anterior wall, and by the backward and upward dislocation of the cervix, causing it to form an angle of ninety or only sixty degrees with the axis of the pelvis, thereby giving the expelling forces a wrong direction. All those changes depend upon the changed location of the fixed point eccentrically from which the uterine hypertrophy is proceeding. Normally this point is the attachment of the cervix to the pelvic floor; here it is the point of adherence to the anterior abdominal wall. From these theoretical deductions it will also be seen, that if the uterus is not firmly and unyieldingly adherent, and if the adhesions are so soft and thin that they will gradually stretch owing to the straining and pulling of the growing uterus, then the pregnancy and the labor will also become nearer normal and proportionately so to the yielding of adhesions. So much for the theoretical deductions.

In 'ninety-five and 'ninety-six, Dr. Charles P. Noble, of Philadelphia, had two cases of labor in women where he had performed ventro-fixation a couple of years before. In both cases the condition was the same, viz.: an hypertrophied anterior wall obstructing the pelvis, a distended, thin posterior wall, posterior displacement of the cervix and breech presentation. In the one case cephalic version was necessary, in the other Porro's operation. As will be seen, he found exactly the same condition as a theoretical deduction would make us expect. Dr. Noble then instituted a thorough research in regard to the effect of the operation in question upon pregnancy, the results of which he published in an excellent paper in the *American Journal of Obstetrics* for August, 1896. His conclusions from statistics, consequently from actual experience agree with the theoretical deductions mentioned above, and are, that in those cases where soft, yielding and slight adhesions have been produced, as in Dr. Kelly's cases, there have been hardly any bad symptoms during pregnancy and labor, and that consequently the aim of the operation must be to produce slight and yielding adhesions, and that Dr. Kelly's method is the one which promises the best results in this direction, although he himself from an obstetrical point of view advises to attach the anterior face of the fundus instead of the posterior, admitting though that Kelly's method of attaching the posterior face is better from a gynecological point of view. Performed in this way the danger of an operation in regard to pregnancy and labor is very small.

One question more has to be solved in the future before discussion of this subject can be considered closed, viz.: what becomes of the adhesions after pregnancy; will they still be tense enough to prevent the uterus from falling back if it should show any tendency to do so? The fact that no relapses have occurred as far as

known after pregnancy, does not prove that the suspensory ligament is tense enough to keep the uterus in position. Even with the use of a pessary it will sometimes happen, that after a pregnancy, if the patient is careful, the round ligament will undergo a physiological retrograde shortening to such an extent that the uterus will keep in normal position without a pessary if it only is prevented from falling back during the first four or five weeks after labor. I have only been able to find one note bearing upon this question. Dr. Kelly says in his operative gynecology, that he in one case could feel after the labor was over, the tense ligament going from the abdominal wall over the fundus to the posterior wall. A ligament of such length would hardly be able to prevent a uterus after normal involution from falling back in the first or even the second degree of retroversion, especially if the retroversion was accompanied with anteflexion. This question, therefore, has some bearing upon the tendency to relapse after child birth, and it is hoped that it will be answered in the future by laparatomies on or post mortem examinations of women in whom ventro-suspension has been performed, and who later have gone through a pregnancy to full term.

In ending this paper I will summarize the deductions in the following conclusions:

First. There are only three operations for retro-displacement which need to be taken into account, viz.: Alexander's operation, or extraperitoneal shortening of the round ligament, Wylie's operation, or intraperitoneal shortening of the round ligament, and ventro-suspension according to Dr. Kelly's method.

Second. In cases of retrodisplacement without adhesion, where the uterus can be lifted up, but where no relief is obtained by medical treatment or by a pessary, Alexander's operation is to be performed.

Third. In cases of retro-displacement with adhesions, where laparotomy has to be performed to loosen the adhesion, ventro-suspension ought to be performed if both ovaries are extirpated. If one or both ovaries are left the choice will be between ventro-suspension and Wylie's operation, with a possible preference for Wylie's operation, as it is impossible, even with Kelly's method, to be perfectly sure that the adhesions will be yielding enough to permit normal pregnancy and labor, while no such objections can be made against Wylie's operation. Still, the choice here might be individual with the different operators. If there are numerous very strong adhesions leaving the posterior surface of the uterus very raw, hysterectomy would be indicated if the appendages have to be removed to avoid the danger of adhesions forming between the bowels and the denuded surface of the uterus.

Fourth. In cases of complete prolapse, ventro-suspension is indicated.

## LIGHTS AND SHADES OF LIFE AMONG THE INSANE.\*

BY D. S. MOORE, M. D.,

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Jamestown, North Dakota.

I think there is no man who is oftener called upon, in the discharge of his every day duty, to "rejoice with them that do rejoice and weep with them that weep," than the physician whose daily round of duty leads him through the wards of a hospital for the insane. One passes through and in recognizing must in some measure experience in his own mind a wide gamut of emotion and fancy, and often follow slowly and painfully the processes by which some poor crippled mind, long sunk in the morass of the stuporous forms of mental affection, is trying to drag itself back as it were to reason's firmer ground. A half day spent among those affected by mental disease affords a succession of views and a sort of psychological kaleidoscope which is apt to leave a person who is unaccustomed to the strain with a slight sense of confusion and mental fatigue.

As far as possible, with the lack of room usually present in public institutions for the insane, and with the rapidly changing symptoms of many cases of mental disease, the different cases are classified and kept together under similar conditions. To pass from one ward to another, therefore, is often a transition which comes to a mind unfamiliar with these strange sights and sounds in the nature of a shock. Even in the same ward the extraordinary complexity of the human mind is revealed in the odd, varying and often strangely fascinating fancies of patients who sit side by side in apparent harmony with each other. Often patients recognize the absurdity of the fancies of their fellow inmates, while taking their own delusive ideas with perfect seriousness. Occasionally, however, we see cases in which one patient will accept and adapt as his own some delusion of another patient with whom he has associated and conversed.

For a study of the different external expressions of sorrow, an artist could find nearly all phases represented among a number of melancholic patients. There are some of these who at first have little or no affection of the intellect, but are oppressed by an often vague and obscure dread or grief for which they themselves are occupied continually in conjuring up a cause. They will converse rationally upon all subjects, but invariably return to that of the overmastering depression which has seized upon them and attempt to satisfy themselves as to its cause. Too often they are finally successful in their task and the unpardonable sin, or an incurable disease, or an impending calamity, all existing only in the

weakened imagination of the patient, becomes to them a sufficient explanation for the presence of the blackness of darkness which enfolds them in its awful embrace. Again others wander restlessly up and down with convulsed faces and dishevelled clothing, creeping, moaning, wringing their hands at the thoughts of some impending calamity, some awful storm about to burst upon them or their loved ones. Others sit as if stunned by the knowledge of some dread secret, the head bowed, tears trickling unheeded down the cheeks, the eyes closed or staring lustreless into some realm of secret misery, unknown and uncommunicable to us. There is much variety in this disease of melancholy within as without hospital walls.

As we close the doors upon this aggregation of misery, perhaps the distant echo of a laugh comes to us from another source, and we may soon tread among those who sit it might seem ever in a fantastic realm of jollity, where every sight or sound from without or secret thought conceived within is but a fresh provocative of mirthful cachination. We walk among habitual clowns, of grotesque attire and odd gestures, who laugh sometimes in pure abnormal exhilaration of feeling, at others deride spitefully our personal appearance, or mock our dignified tread or æsthetic movements in a way which it is well for the peace of mind of old Delsarte that he did not live to see. Here and there a suppressed snicker, or a silent, yet expansive grin, reveal the same mood in less audible form. Here and there a strange sound echoes through the corridor startling those who do not live where such sounds often strike the ear. It is the laugh of a body without a mind, the mere automatic reproduction of a sound by the physical organs, without any accompanying feeling of mirth; the laugh of the chronic maniac or demented.

Closely connected in recollection with this class of patients, because usually dominated by a general feeling of exhilaration, are those generally known as paretics, of whom we have so few in North Dakota, the reason of which exemption might afford subject for an afternoon's discussion in itself. Here the eye of the poet and the madman seem to be combined in the gigantic conceptions of immeasurable strength and power and wealth and beauty which fill the minds of the victims of progressive paralytic dementia. I drop in to see my old friend, who was formerly the pastor of a city church, a man of eloquence, of power, of activity; changed now, alas, physically, and his delusions, too, reveal a change in the line of his thoughts, for, when I ask him the secret of the look of placid happiness which sits enthroned upon his features, he tells me of a wonderful horse he possesses which can make the circuit of the globe in four minutes. The ex-railroad conductor sitting by, smiles at me in

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token that he understands that my venerable friend cannot be just right in his mind, and in answer to my question as to his occupation, replies pompously that he is the Pope of Rome. Such marvels carry one back to the days of the Arabian Nights, if such an expression may be forgiven. The man who owns a hundred thousand million billion dollars in gold, and who sits by the window looking out over the verdure of the lawn, waiting for a special train that is soon to arrive to take him to Washington to confer with President McKinley, asks you with his peculiar parietic articulation, if you happen to have a cigar about you. If you have one he will take it if you do not mind, and in return for your generosity he invites you to go with him to Washington. On the train he has a trunk full of the most excellent Havana cigars and he will light a fresh one every twenty minutes during the trip. I shake my head sadly and turn away.

In strange contradistinction to the expansive delusions of the parietic, with the occasional glint of fancy or humor which seem to mitigate the almost certain speedy dissolution which awaits him, the stolid automatism of the terminal dement may next claim attention. He rises in the morning, dresses, eats, goes through with a simple form of exercise and retires again at night in obedience to the injunction of his nurse or in imitation of the voluntary action of more intelligent companions. He goes about perhaps as a man in a dull dream would go about, with very little conception of the environment or himself, and certainly no reflection on their mutual relations. His situation has its compensations. Partial mental death is its own anæsthetic. Physical comforts content him. He usually eats and sleeps well and with intense animal satisfaction.

The homicidal maniac, a division purely symptomatic or rather medico-legal in its origin, may be of the type which is constantly and furiously set upon the destruction of his fellow beings, or he may only be seized at intervals of greater or less duration with the impulse to kill. In either event, however pitiable his case, society often does not look very kindly, and certainly cannot look very pleasantly upon him. Provision should be made by the law for the longer detention of patients who have been attacked by homicidal mania, after they have apparently recovered full mental control.

Homicidal acts are often the result of epilepsy, either as a direct consequence of the paroxysm, or indirectly from the increased and uncontrollable irritability produced by the disease. Separate provision should be made for epileptic insane patients if possible. Often between paroxysms there are long periods of nearly normal mentality, when continued association with insane patients of other classes annoys them

greatly and increases the propensity to acts of violence.

The popular impression of Bedlam, a mediæval idea which even yet retains its hold upon the people who are unfamiliar with the interior of institutions for the care of the insane, is nearly realized in a ward of noisy patients where profane and vulgar language seems the natural expression of the disorderly thoughts that whirl tumultuously from congested brains. Swearing and other objectionable language rises with some of these patients to almost the dignity of a horror. Then in quieter wards we meet graver and quieter patients who write and write, often reduced by necessity to the use of very odd materials; an old stub of a lead pencil and paper intended by the manufacturers for quite another purpose than that of being a repository of human thought, being the usual armament with which the insane literateur pursues his self appointed task. His pockets are filled with his productions, and often for lack of other room he makes holes in the lining of his coat and uses the ample cavity thus obtained as a receptacle for bulky manuscripts, often intelligible to the author alone.

I presume only a certain amount of phlegm in a physician will enable him to resist the piteous pleadings of patients to go home, without a great amount of wear and tear on the nervous system. You hear it everywhere around you, these requests to go home, often urged by those to whom it is quite improbable that it can ever be granted for their own good and that of the public. Any reason you may give sounds to the petitioner often irrational and unreasonable, and sometimes very irritating. It is very hard to have to say no to these importunate pleadings. They tug hard at the heart strings of the oldest specialist sometimes. There are many exceptions to this rule of prevalence of nostalgia among the insane. The Messiahs often do not care to leave the scene of much of their labor, and a place where creature comfort is readily found without too much time occupied in labor, and where there is literally no anxiety to be taken as to what they shall eat or drink, or wherewithal they shall be clothed. And "the queen," that embodiment of portly dignity, have we not nearly all basked in the sunlight of her benign smile as she sits covered with fantastic tinsel decorations, and wearing an impossible crown made of black velvet. We smile, and yet are conscious of a trace of pathos in it all. Lights and shades mingle, weeping and laughter; the silence of a mindless body, the noisy loquacity of a brain running with all the brakes off. A study of infinite complexity this attempt to find the pathological reverse for this symptomatic obverse which we perceive in insanity.

## REPORT OF SURGICAL CASES.\*

BY JOHN T. RODGERS, M. D.,

St. Paul.

Mr. Chairman: Gentlemen of the North Dakota State Medical Society: In selecting the cases which I desire to report today, I have used only those which I hope will interest you in a branch of surgery which is not receiving the attention from the profession that its importance demands, namely, surgical conditions or diseases of infancy and childhood. The surgical affections of early life differ from those of mature years chiefly only in degree. In malformations it is almost a universal practice of surgeons to advise operation at once, although there are yet some members of the profession who let their patients go too long before operation.

In all new growths, congenital, in infancy or early childhood, it is unsound practice to delay surgical procedures, and yet we often see such cases which have been neglected by the advice of the family physician. An exemplification of this will be noticed in the first case to be reported.

The opinion largely prevails among physicians, and also among the laity, that children do not stand surgery. It is true that they do not stand the loss of blood well. The reasons for this are obvious. It is also true that they do not as readily recover from shock as adults. I mean shock independent of hemorrhage. On the other hand, a wound, whether lacerated, contused or incised in a healthy child heals more readily than in adults. With the improved technique for the prevention of shock and hemorrhage, and if the surgeon operates rapidly and the anæsthesia is not prolonged, I believe it possible to perform operations of great magnitude in infancy and early childhood without a high mortality rate. It has been said that a healthy child, if it can be gotten off the operating table alive, will probably recover. This was the opinion held by some surgeons in preantiseptic days. If it were true in those days it certainly ought to be true with our modern methods of operating.

I shall not tire you with a lengthy resume of the literature upon this subject, but, with these few preliminary remarks, will offer for your consideration the following cases:

Case I. De Lone P., white infant, age six months. Child fleshy, but extremely anæmic. Angioma of the lower lip, involving, as will be seen by the picture, a portion of the cheek and chin; also angioma of the left parotid region and a very small angioma of the left axilla. These growths were congenital but at birth were very small. The mother was advised by her family physician on no account to have operation performed until the child was two years of age. The prognosis was bad. The growth of the left parotid, being most troublesome, and furthest

advanced, was removed by Dr. Wheaton. The child lost very little blood, apparently stood the operation well, but refused to respond to stimulation. Died from shock at the end of twenty-four hours. There seems little doubt if this child had been seen early its life could have been saved.

Case II. Tom J. W., age five years. White. American. Large tumor on right side of abdomen extending from right costal ridge to within one inch of crest of the ilium. Tumor was first noticed soon after birth. Parents were advised against operation. Has gained steadily to size seen in picture. Tumor was firmly fixed in abdominal wall, freely movable over the costal cartilages. Tumor removed by Dr. C. A. Wheaton, March 4. Very little hemorrhage; no shock, primary union. Recovery uninterrupted. Stitches removed on the 11th of March.

Case III. Mike C. Age three years. Admitted to City and County Hospital, Dec. 30, 1898. Well developed, fat, plump child. Very pale and anæmic from loss of blood. Was admitted to the hospital immediately after an accident, which was an explosion of the cook stove. The right leg was broken in middle third, both tibia and fibula protruded and extensive laceration across the outer and anterior surface of the leg, wound encircled about half of the leg. All muscles on outer and anterior side of leg were severed. Anterior and tibial peroneal arteries were severed. Child was seen and dressed by the surgeon then on duty. Vessels were tied with cat gut, wound irrigated with 1 to 4,000 bichloride solution; muscles and fascia were sutured with interrupted cat gut, skin with silk worm gut; wet bichloride dressing applied. Plaster of paris cast applied over this. Patient suffered greatly from shock; was given strychnia and nitroglycerine, hypodermatically, during the operation.

On January 1 I saw the child for the first time. His temperature was high. A window was made in the cast and the wound irrigated and redressed. On the following day the cast was removed and a posterior splint was applied; hot bichloride poultices frequently changed. Until January 12 the wound continued to discharge large quantities of foul pus. The child's general condition, however, seemed to be improved. On January 12, under an anæsthetic, the wound was curetted thoroughly, a large quantity of 1 to 5,000 bichloride was used for irrigation; both bones were wired, muscles and fascia were sutured with figure of eight silk worm gut suture, and a small piece of iodoform gauze was left for drainage; a thoroughly antiseptic dressing, with a plaster cast, was applied. Union of skin and soft parts primary. Cast was changed at intervals up to Feb. 23, when it was removed and bony union was perfect. On

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March 1 the child was walking. Discharged March 15. Partial anæsthesia on the dorsum of the foot; muscular union somewhat impaired, but bony union perfect. General condition of child perfect.

Case IV. Harold G., referred to me by Dr. W. G. Morley, of St. Paul, Minn. Diagnosis, congenital hernia of the right side. Age 20 months. When first seen by Dr. Morley the hernia could be reduced with anæsthesia. Last two or three times had to give an anæsthetic before the hernia could be reduced. Child was well nourished and strong. Operation, St. Joseph's Hospital, Oct. 28, 1898. Incision over the tumor cut down to the sac. Sac opened and found to contain omentum and a portion of the cæcum and appendix, the latter about five inches long containing several fæcal concretions, and its walls thickened, showing evidence of previous inflammation. Appendix ligated at its base, cauterized, stump turned in. Contents of the sac were not adherent. A portion of the omentum was removed and the sac tied off and removed. Considerable difficulty was experienced in finding and isolating the vas deferens. Deep structures brought together with interrupted cat gut sutures. Silk worm gut for skin and fascia, using the Fowler stitch. Plaster of Paris spica bandage applied over a sterile dressing. Anæsthetic, chloroform. The operation was practically Bassini's method. Patient left hospital on fourth day. Recovery uninterrupted. Primary union throughout. At present writing there is no return of hernia.

Case V. Ira P., referred to me by Dr. Chas. Ball, of St. Paul. Age two years. Four days previous to date of operation was brought to Dr. Ball's office with some pain and tenderness in right iliac region. A few days previous to this he had attended a picnic and eaten heartily of popcorn, peanuts and drank pink lemonade, which was followed by acute gastro-intestinal disturbances, pain localizing itself at McBurney's point. At the time of operation there was a well marked tumor at this point. Operation, St. Luke's Hospital. August 1, 1898. Incision three inches in length was made directly over the fluctuating mass and a large amount of thick, greenish offensive pus, strongly fæcal in odor, escaped, apparently coming from the perforated appendix. As the cavity was well walled off, the appendix was not sought for. Packed with iodoform gauze. Anæsthetic, chloroform. Recovery uninterrupted and up to present date has had no further attack of appendicitis.

Case VI. Baby G. White, to all appearances a female infant, well nourished. Twenty-eight days old. Strangulated right inguinal hernia. Case was seen in consultation with Dr. Eshelby, of St. Paul, January 15, 1899. Hernia became strangulated early in the evening. Was

seen by Dr. Eshelby at 10 p. m., and attempts were made at reduction by taxis. This failing, the writer was called and operation performed at 1 a. m. Preparations for operation were hurriedly made and it was done by the light of oil lamps in a suburban residence with no assistant except the anæsthetizer who had great difficulty in keeping the baby asleep. Oblique incision was made over the tumor. Sac opened and found to contain a knuckle of small intestine, black, but not gangrenous. After relieving the strangulation, which was at the external ring, the gut was restored to the cavity. At the lower portion of the sac was found a discolored organ, resembling an ovary, firmly adherent, which I attempted to liberate, but as the hemorrhage was quite severe, decided to ligate and remove it. No attempt was made to dissect out the sac. The canal was closed by interrupted cat gut sutures and the overlying structures with interrupted silk worm gut. Dry dressing applied. The shock following that operation was considerable and required hot saline enemata and whiskey for stimulation. Recovery uninterrupted. Child was brought to my office day before yesterday and there was no return of the hernia. Child in perfect health.

So far as I have been able to ascertain this is the youngest case of strangulated hernia operated upon with success on record. Microscopic examination of the specimen taken from the sac of the hernia showed it to be a testicle instead of ovary as was first supposed. The other testis was sought for in the labium, but could not be discovered. The external genitalia, with the exception of very large labia majora, are perfect. I did not probe the depths of the vagina, nor did I attempt to discover whether or not the uterus or ovaries were present.

This case, to me, is one of exceeding interest and is certainly unique. I shall watch the development of this child and perhaps have some further report to make of the case at a later date.

#### PROBING THE NASAL DUCT.\*

By J. H. RINDLAUB, M. D.,  
 Fargo, North Dakota.

A number of years ago, when I was superintendent of schools in a Wisconsin city, it was my custom to go down to the lower grades to see how things were getting along, and occasionally I would propound questions to the little folks in order to cultivate their thinking faculties. I remember one day I asked the youngsters what reasons they could give for the nose being located where it was on the face. I recollect getting all sorts of answers, some of which were intensely amusing. At last, one little girl raised her hand and said, "My mamma goes to the doctor twice a week to get a hole made from her

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eye down to the nose so the tears won't run over her face, so I guess that's why the nose is where it is in order that the tears may have a place to go."

Sometimes I wonder if some of our physicians give as much thought to the function of the nasal duct as this little child.

In the whole list of cases coming under the oculist's care, there are none in which we have more satisfactory results, and, on the other hand, there are none which try the patience of both patient and physician more than affections of this membranous duct contained in an osseous canal only three-quarters of an inch in length, extending from the lachrymal sac, which is really the dilated upper extremity of the duct, to the inferior meatus of the nose.

Not many years ago eye surgeons failed to appreciate the true etiology of diseases of the duct and gland and were inclined to ignore that part played by the nasal mucous membrane when discussing the pathology of catarrh of the lachrymal sac, dacryo-cystitis, dacryo-cysto-blephorrhœa, lachrymal fistula, or hydrops of the tear sac, which, you will all agree, are essentially one and the same process.

Infection of the sac and duct by fluids from the conjunctiva has been in my experience very rare unless there has occurred a stoppage in the lower part of the mucous membrane of the duct, which, as you are aware, is continuous with the pituitary lining of the nose.

It is sometimes a difficult matter to decide when the proper occasion has arisen for the use of the probe. Most certainly it should not be used in those cases of epiphoria or dacryo-cystitis following the first attacks of acute rhinitis, because the occlusion is simply transitory, and will usually subside with the improvement of the nasal mucous membrane, and in these cases I never attempt anything in the line of treatment except the employment of anodyne, antiseptic or astringent solutions, with perhaps slitting the canaliculus or making an incision through the anterior wall of the sac below the internal palpebral ligament in order to allow more thorough cleansing of the sac, being guided in each instance by the severity of the case.

However, in those chronic inflammatory affections which have produced a stricture of the duct, due not only to the engorgement of the submucous plexus, but also to a permanent stenosis from thickening of the periosteum, you have no alternative, in the majority of cases, other than using the probe, and just here arises a question as to the most frequent position of the established stricture. Is it in the upper portion, the lower portion, or are there multiple strictures? It seems to be the consensus of opinion that in long standing cases the last is the rule, yet as regards frequency, authorities claim that the

upper extremity is most often the seat of the occlusion.

Although I may be entirely wrong in my deductions, yet since my friend, Dr. Grant, of Akron, Ohio, suggested that I try probing from below, I have come to the conclusion, at least so far as seventy-two of my own recorded cases were concerned, that the stricture is more often in the lower extremity, and, acting upon this idea, I usually reverse the ordinary method of probing from above.

Although the method of entering the probe from below is extremely simple, yet a few words as to the technique may not be out of place. The probes I use were made by myself, but any of the ordinary ones will answer your purpose. After the nasal passage has been cleansed, cocainized, dilated, and illuminated with a strong light from the head mirror, pass the short arm well under the lower turbinal parallel with the floor of the nose so that the point is in close proximity to the opening. Now gradually lower the long arm, and, if the probe has been placed correctly, one can feel it slide into the canal orifice. If unsuccessful the first trial, move the probe gently forward and backward until you get to a point where resistance ceases and the probe enters. Now cautiously push it into the canal as far as possible. No harm can come even with an improperly handled probe, except, perhaps to the canal exit, simply for the reason that there is nothing else here to injure. On two occasions, I have penetrated the antrum, but in these instances my probe slipped in so easily that I came to the conclusion that there was an unnatural opening between these two cavities, for certainly it would require considerable force to penetrate the osseous wall.

I think I do not make a misstatement when I say that many general practitioners hesitate about using this instrument simply for the reason that they feel that they lack the proper amount of skill and that they are fearful lest they do more harm than good, but I am satisfied that if they will give the method of probing from below a few trials, they will meet with such gratifying results in so many of their cases that they will become enthusiastic supporters of this procedure and will at least deem it worthy of a trial in all cases.

I do not mean to be understood that this method is always easy, or that you will always be successful, by any means, for you will meet obstructions in the upper part of the canal and subjects where it will be impossible to enter the probe satisfactorily from below. In such cases you must enter from above. A hard and fast rule cannot be laid down. Each individual case must be studied by itself. It often requires a deft hand and much experience no matter which extremity we choose.

In those cases where the stricture is so tough, tight and unyielding that it is necessary to divide it with the knife before resorting to the probe, or when considerable force is necessary to effect a passage, it certainly would be preferable to enter from above for several apparent reasons. In instances where the stricture is quite soft, the obstruction caused by tumefaction of the mucous membrane and an excess of mucus rather than a dense fibrous thickening, the writer has found probing from below and syringing from above to give the best results. The size of the probe used is to be the largest that can be passed with ease. This statement, however, is somewhat indefinite, for you may draw your own conclusions when I say that the higher numbers are many times more easily introduced than the lower, and that I have frequently been able to pass one of the larger instruments after I had failed with one several sizes smaller. The above remark as to the diameter of the probe applies no matter how used. Formerly I thought it quite sufficient when I was able to enter with Bowman's number four, and this was the theory taught me by Prof. Fuchs, of Vienna, but the results of my employment of the larger sizes of Theobald's during the past three years have converted me to Johns Hopkins eminent oculist's method, and I do not hesitate to say that in my opinion the day of small probes has passed.

Prof. Theobald's probes and technique are too well known to need description. They can be found depicted in any late text. In brief, his set consists of sixteen, varying from one-fourth of a millimeter up, each successive number being one-fourth of a millimeter thicker, so that number sixteen has a diameter of four millimeters, the smaller ones being made of silver and the larger of aluminum. Preparatory to the introduction, the lower canaliculus is slit well up to the juncture with the sac, after dilating with number one or two. This being accomplished, number five or six is usually passed, even if force is necessary. The passage of the probe is repeated, gradually increasing the size, and allowing it to remain *in situ* fifteen or twenty minutes. At first this is practiced every other day, then every third day and so on until as large a probe as deemed necessary has been introduced, and this is continued until the canal remains patulous.

I have purposely refrained from giving medicinal treatment accompanying the use of the probes, nor have I gone into the various complications arising from stricture. A volume would be required to go into detail and give an account of the various operations devised for the cure of affections of the lachrymal duct, some even going so far as the removal of the gland. The object of this paper was not to enter exhaustively into the subject, but rather to bring out a few points which I have found of great benefit to me

in my practice, and, although there may be nothing new, I trust the remarks will at least furnish some food for thought among those who have this class of cases to deal with and have hitherto looked upon them largely as a nuisance.

The 67 cases which I cannot here read in full comprise 33 cases of the strabismic variety and 34 heterophorias, mainly esophorias. Of the 33 cases above mentioned and tabulated, since I gave preference to Capsular advancement in the cases mentioned in this paper, eleven were convergent strabismus, thirteen concomitant, seven divergent and two hyperphorias. In two of these cases the stitches broke and the result after the first operation was negative. This was due to the fact that I included muscular fibres in my sutures. I also gave preference to muscular advancement in myopic cases having an accompanying esophoria.

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## HOSPITAL AND CLINICAL MEMORANDA.

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### A CASE OF PORRO-CÆSAREAN SECTION. RECOVERY OF BOTH MOTHER AND CHILD.

In the American Journal of Obstetrics, 1896, I reported a case of Porro-Cæsarean section, with recovery of both mother and child. Since that time I have had a second case of which the following is a brief report:

Mrs. O. L., Swede, aged 25. Admitted to St. Mary's Hospital, Rochester, Minnesota, June 27, 1898.

History: She has borne two children, labor coming on at term, and complete embryotomy was necessary in each instance to deliver. She unavoidably received serious injuries during the delivery, and after the second a paralytic condition of the left limb ensued from which she has never recovered. She is now pregnant at term.

Examination: An emaciated woman, looking much older than her years. Heart and lungs normal. Urine contains one-fourth of one per cent of albumen. Left limb somewhat smaller than the right; her walk is much disturbed by a paresis of certain groups of muscles of the limb. Uterus the size of term and the child lies in a normal position, cervix high up and there is evidently an obstruction on the left side.

June 29, the abdomen was opened, the uterus incised and an eight pound living male child was delivered. The uterus was quickly removed by supravaginal hysterectomy. Mother and child discharged in good condition, July 22.

An attempt was made to have the child nurse, but the milk failed to appear. Both mother and child have remained in good health. The obstruction was due to myofibroma.

W. J. MAYO, M. D.

Surgeon to St. Mary's Hospital,  
Rochester, Minn.

# NORTHWESTERN LANCET.

A SEMI-MONTHLY MEDICAL JOURNAL.

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JULY 15, 1899.

## A CORRECTION.

Owing to an unfortunate mistake in making up the Lancet of July 1, the papers of Dr. J. T. Rogers and Dr. J. H. Rindlaub were published in an incomplete form. To rectify the error these two papers are given entire in the present issue.

## A SURGICAL GENIUS.

The only medical man who has ever been raised to the British peerage, the present Lord Lister, undoubtedly did more for the advancement of medical science than was ever done by any one man of his nation, or, perhaps it may be said, of any nation. Lister's application of the germ theory to the explanation of the suppuration of wounds, and above all his demonstration of a practical method of preventing that suppuration, was a scientific discovery rivaled in importance by but one other in the history of medicine, that is, the discovery of surgical anæsthesia. Every abdominal surgeon of today, could he follow back link by link the chain of events which make it possible for him to do successfully operations that, thirty years ago, it would have been little less than manslaughter to undertake, will find that chain had its starting point in the original principles enunciated by James Lister. But there died last month an abdominal surgeon who owed nothing to Lister, who from the start repudiated and scorned both the theory and practice of Listerism, yet whose results in abdominal surgery were unequaled. That surgeon was Lawson Tait.

To understand the peculiarity of Tait's position in the surgical world it is necessary to under-

tand the position of things in that world twenty years ago. Abdominal surgery was then but a few years old. Chemical antisepsis was the only reliance. Sterilization by heat, asepsis, were things unheard of. The surgeon, not knowing just why or how he was able to open with impunity the dreaded peritoneal cavity that had been as a sealed book to his predecessor by a few years, clung blindly to the rules of thumb by which he was taught to operate, and accepted the spray, the cumbersome and complicated dressings and all the paraphernalia of that day, only too glad to get good results. And there, a surgical paradox, stood Tait, reviling and ridiculing germs, antiseptics and the men who used them, while at the same time getting results in abdominal surgery that no one could match.

In May, 1886, Tait published a paper containing a list of his ovariotomies for the years 1884, 1885, one hundred and thirty-nine consecutive cases without a death. The initials of each patient were given as well as the name of the medical man by whom the case was referred, so that all cases could be identified; the list was never disputed and stands on record as wonderfully successful surgery. The peculiar thing about it was that Tait used no chemicals whatever, his hands, sponges and instruments were cleaned carefully, but with ordinary soap and water; he used dry absorbent cotton for dressings and washed out the abdominal cavity with water taken directly from the tap; as he described it: "I fill the abdomen with blood-warm water, and wash all the organs, and I repeat this until the water comes off clear; and I wish to say that the water used has not been boiled, and contains no drug or chemical substance beyond what is stated in the report of the Medical Officer of Health for the Borough. The water is plain unfiltered tap-water, warmed by the addition of enough from the boiler. It is full of germs and spores and small beasts of thirty-four different varieties according to a careful report of Dr. Alfred Hill, published some few years ago."

In fact, Tait was for a long time a puzzle to his contemporaries, and well deserved to be dubbed "the wizard of Birmingham." His operations were jealously watched and spied upon in the hope that some hidden and secret powers would be discovered to account for his success. His position was well described by the late Dr.



G. F. French, of Minneapolis, in an address delivered before the section of gynæcology of the Minnesota State Medical Society, in 1886:

"In the medical world Tait is the counterpart of Ingersoll in the religious; the iconoclast of medical orthodoxy. As the laity disbelieves in law and order because Ingersoll successfully ridicules the notion of a personal devil, so an analogous erroneous conclusion is liable to be drawn by the profession at large. Tait's forcible denial of the necessity for using germicidal antiseptics, and his apparent disbelief in the existence of germs, will lead many to infer that the scrupulous cleanliness of Listerism is altogether superfluous. Incalculable harm will result. The painstaking methods of Lister have insured that degree of cleanliness which is the sine qua non of all blameless surgery."

Tait's explanations of his own success hinted that no small part of it was due to his manual dexterity and skill as an operator, and this was doubtless quite true, for those who saw him work testified that his short, fat fingers seemed endowed with almost superhuman sagacity while exploring the depths of a pelvis. But all his skill did not justify the colossal vanity and supreme arrogance of the man, who made himself universally disliked by his intolerance of any expression of opinion from others and by the overbearing way in which he laid down the law about disputed points. In these days, when the operator's watchword is to sterilize everything, it is easy to see that Tait made ordinary cleanliness take the place of surgical cleanliness, the inference being that preparations for an operation at the present day are carried farther than is absolutely necessary. This, however, is a good fault and one which, it is to be hoped, will be persisted in.

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## BOOK NOTICES.

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A Text Book of Anatomy. By American Authors. Edited by Frederick Henry Gerrish, M. D., Professor of Anatomy in the Medical School of Maine. Illustrated in black and colors. Philadelphia: Lea Brothers & Co. 1899. Price, cloth, \$6.50; flexible waterproof binding for the dissecting table, \$7.

It must arouse at once feelings of pride and pleasure in American practitioners and students of medicine to see the magnificent work upon anatomy that has been produced under Dr. Gerrish's management by American authors. The

terse, clear descriptions of the text, the numerous and handsome illustrations, taken in connection with the attractiveness of the setting provided by the publishers, make altogether a work that of its kind is unsurpassed.

The writers who have assisted Dr. Gerrish in getting up the book are Drs. Bevan, Keiller, McMerrick, Stewart and Woolsey. Their aim has been to present more particularly those portions of anatomy that are of special service to the student and practitioner, but the work is made to cover also that greater range of anatomical knowledge which all medical men must know once, but which they are not expected to keep in mind forever.

As anatomy is learned by illustrations quite as much as by the text, the pictures of an anatomical work must be a leading feature. The authors of the Text-Book have cut away from Gray altogether, their illustrations being largely drawn from Testut, with many that are original, particularly those of a diagrammatic character. Testut's pictures are clear and accurate, and the engraving of the names upon the parts in clear letters is a great help. Were any criticism of the plates to be offered it would be that they are too ideal, but that has always been the fault of anatomical illustrations as every student finds out at once when he begins to dissect. By a liberal use of colors the pictures are made at once more attractive and more useful.

Considering the profusion of the illustrations the book has been kept of very moderate size by condensing the text to the fewest words that will give at once a full and a clear description.

Especial attention is called to the volume with flexible covers for dissecting room work, one that readily lies open at any page, may be sponged clean, and is so handsome in appearance as to suggest that it belongs to an edition de luxe.

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## MISCELLANY.

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### THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

The chairman of the Committee on Arrangements has issued the following notice:

The American Electro-Therapeutic Association will hold its ninth annual meeting at Washington, D. C., September 19, 20, 21, 1899. The president, Dr. F. B. Bishop, appointed the following Committee of Arrangements:

Drs. D. Percy Hickling, Chairman; Jos. Taber Johnson, G. Lloyd Magruder, Z. T. Sowers, Robert Reyburn, G. Betton Massey, Chas. R. Luce, Elmer Sothoron, Llewellyn Eliot, Clifton Mayfield.

Willards Hotel has been chosen for the headquarters and special rates have been made for all interested in this meeting.

Many able papers have been promised and a very successful scientific meeting is assured.

There will be a large and varied exhibition of electro-therapeutic apparatus in Willard's Hall during the meeting of the association. Willard's Hall is well adapted for this purpose, as it not only adjoins the headquarters but communicates with it by a corridor, there is also a large entrance directly from the street. The committee also promises a very pleasant social program, including a reception by the president of the United States, an excursion to Mt. Vernon, Arlington and Alexandria, a buffet lunch to be served at Alexandria, an evening visit to the congressional library to be viewed under electrical illumination. Provisions have also been made to visit the war, state and navy departments, the United States treasury and other public buildings.

It is earnestly hoped that every fellow, active, honorary and associate will be present at this meeting as we want to make it rank among the notable meetings of this association.

#### INTER-COUNTY MEDICAL SOCIETY.

##### Program.

July 18, First Day.

Opening at 9 a. m.

The first half day will be devoted to clinical demonstration of cases, pathological specimens and microscopical preparations.

Professor J. B. Murphy, of Chicago, will be with us at that time.

Afternoon Session.—Papers.

The So-called Third Tonsil. Its Relation to Naso-Pharyngeal and Naso-Aural Catarrh.....J. R. Straw, Ashland  
Water Filtration as a Factor in the Prevention of Typhoid Fever.....  
.....G. W. Harrison, Ashland.  
Typhoid Fever.....J. M. Dodd, Ashland  
Bone Infections: Osteo-Myelitis, Osteo-Tuberculosis, etc.

a.. Pathology and Symptomatology...

.....Fred J. Hodges, Ashland.

b.. Treatment..William T. Rinehart, Ashland

Treatment of Diphtheritic Laryngeal Stenosis by Serum, Calomel-Fumigation and Intubation.....M. S. Hosmer, Ashland

Evening Session.

A Musical Program.

Demonstration of the X-Ray and Microscopical Preparations.

July 19, Second Day.

Papers:

Uterine Displacements.....  
.....J. V. R. Lyman, Eau Claire.  
Gastro-Intestinal Antisepsis.....  
.....S. S. Ridell, Chippewa Falls  
Appendicitis, as Viewed by a Victim...  
.....D. W. Day, Eau Claire  
Rectal Alimentation...O. M. Sattre, Rice Lake  
Post Hemorrhagic Blindness.....  
.....F. R. Reynolds, Eau Claire

Humorous Incidents of Medical and Surgical Practice....H. M. Read, Menomonie  
Medical Cases in Country Practice.....  
.....Robt. Cottington, Bloomer  
Some Thoughts on the Care of Infants and Children.Wm. B. Hopkins, Cumberland

School Hygiene.Geo. W. Saunders, W. Superior  
At the conclusion of the session the Ashland County Medical Society will generously take charge of the members of the Inter-County Medical Society, tendering them a boat ride on the bay, with a trip among the islands and dinner on one of the islands.

#### NOTES.

##### Uterine Wafers.

Micajah's Medicated Uterine Wafers, made by Micajah & Co., Warren, Pa., are valuable in cases of engorgement of the cervix uteri, where they afford marked relief; in fact, in all inflammatory conditions they are highly beneficial, and in cases of endometritis decided improvement has been reported from their use.

##### Obstinate Acute Intestinal Catarrh.

Professor Ewald (Medical News) prescribes in obstinate acute intestinal catarrh: Resorcin, 75 grains; bismuth salicylate, tannigen, aa.  $\frac{1}{2}$  ounce; white sugar, sodium carbonate, aa. 2 drachms. M. Ft. pulv. Sig., small teaspoonful every two hours.

##### Entero-Colitis.

Dr. M. A. Clark (Atlanta Medical and Surgical Journal) recommends in entero-colitis:

Tannigen, 20 grains; pulv. peptenzyme, 30 grains; Syr. aurantii, 4 drachms; aquae q. s., 2 ounces. M. Sig. one teaspoonful every three or four hours.

##### Intestinal Catarrhs in Infants.

Among the remedies employed in cases of subacute intestinal catarrhs in infants, the following combination is highly recommended by Dr. Hock (Charlotte Medical Journal):

Tannigen, 30 grains; sacchar. lact., 45 grains. Div. in chart. No. X. Sig. one-half powder every four hours.

##### Sanmetto in all Forms of Vesical Disease.

I have found the preparation known as Sanmetto a most excellent remedy in all forms of vesical diseases that have come under my observation, especially the cystitis attendant on the presence of stone before and after its removal, and also the vesical tenesmus from colds and urethral inflammation, both specific and non-specific.

St. Louis, Mo.

Jno. R. Papin, M. D.

## LECTURES AND ADDRESSES.

THE PHYSIOLOGICAL AND MEDICAL TREATMENT OF  
INSOMNIA.\*

BY JOHN V. SHOEMAKER, M. D., LL. D.,  
Philadelphia.

Mr. President, Members of the Minnesota State Medical Society, Ladies and Gentlemen: I appreciate very highly the honor of addressing you on this occasion. My acquaintance with the Twin Cities began years ago, and it has been my pleasure to renew, from time to time, the associations then formed. You have paid me the high compliment of enrolling me in your membership. I am proud to claim this connection with such a learned and progressive body as the Minnesota State Medical Society. I am well aware of the spirit of active clinical investigation which prevails in your state. I have followed the work of your state and county societies for years and have seen them growing in numbers and efficiency. I have known of the work which has so successfully been carried on in this state for the maintenance of an elevated standard in the profession. I have watched the growth of your medical schools and have read the monographs and text-books which have emanated from Minnesota teachers. Your beautiful and prosperous cities have made themselves famous throughout the length and breadth of the land for their commercial activity and enterprise. They are now established as seats of learning and liberal culture.

Since I first knew Minnesota many of those who were active in your Society have been called away, some prematurely, others after long life full of honors and duties faithfully performed. I rejoice, however, as I look around me to see the faces of many of my friends who have long borne the heat and burden of the day, and I sincerely hope that their lives may be spared to bless for many years their families, friends and respective communities. Since that time, too, how many changes have taken place in the methods and armamentarium of our profession! In surgery new and vast fields have been cultivated. In medicine the number of new drugs which have been introduced has been almost legion. Important procedures and tests have been developed in the province of clinical medicine. Novel therapeutical methods have been brought forward and in some instances have totally changed our modes of practice. In many directions the mortality from disease and accident has been decidedly reduced.

One of our maxims in medicine is that we should always endeavor to remove the cause of disease. As long as the cause remains operative it is illogical to look for permanent improvement. Moreover, when we have fortunately succeeded in recognizing and nullifying the cause of a disease the effects may endure for a certain and sometimes by no means inconsiderable period. There are cases also in which, although we may identify, it is beyond our power to destroy the cause of a disease.

Symptomatic treatment is not only permissible; it is often all that we can adopt until we have thoroughly studied the case. There are certain salient symptoms which demand treatment whether or not we are able to detect their cause and whether or not we succeed in removing the cause.

## INSOMNIA.

Insomnia is one of these prominent symptoms. Habitual wakefulness, indeed, is a very distressing affliction. We meet with many patients whose chief complaint is that they cannot sleep. To lie awake for hours in a darkened room is, to most persons, in itself a penance. We are bound to concede, also, that loss of sleep depresses the general strength. The patient rises in the morning jaded and unrefreshed. He gradually becomes unfitted for his work. His appetite and digestive faculties fail, and he may progress from bad to worse. The nervous system becomes weakened. The patient is apt to grow fretful and capricious in temper. In the face of such difficulties what should the physician do? It will not suffice to drug the patient to sleep night after night for an indefinite period. Medicines which have power to accomplish such result are active for evil as well as for good. Not to speak in this connection of the drug habit which they are so apt to induce, hypnotics possess certain serious disadvantages. They disorder the digestive functions, they are followed by languor, they modify the composition of the blood, depress the circulation or exert a toxic influence upon nerve elements. If they lay the foundation of a habit, as they often do, "the last state of that man is worse than the first."

In these remarks I have particular reference to the insomnia which is not dependent upon the presence of infectious disease or upon organic visceral disorders. The form of habitual wakefulness which I have in mind is found principally in persons of nervous temperament who have led strenuous lives. They have been accustomed to intense mental activity accompanied often by anxiety and suspense. They have neglected physical exercise and they have contracted bad

\*Address delivered before the Minnesota State Medical Society, June 22, 1899.

dietetic habits. In short, they have "burned the candle at both ends." Sooner or later these individuals are driven to seek medical advice. These cases impose upon us a heavy responsibility. Our safest plan is to insist upon an altered mode of life. The feverish activity characteristic of the end of the nineteenth century is the cause of this species of insomnia as it is of so many other varieties of nerve trouble. Insomnia is often the first manifestation of an ominous train of morbid conditions. Under these circumstances I conceive that it is our bounden duty to use every possible means and inducement in order to reform the lives of these patients. They must be led back to more simple and rational modes of existence. I have met with so many cases of this kind and I have observed so much harm wrought by overindulgence in hypnotic drugs, that I am accustomed to use much caution in prescribing them to neurotic subjects, and it is principally these which have any need for such remedies.

#### PHYSIOLOGICAL REMEDIES.

Under this term are grouped together a number of means for promoting natural rest and sleep. Among the most efficacious of these methods is one which such patients are too little in the habit of employing, and that is physical exercise, preferably in the open air. There are so many different modes of taking exercise that there should seldom be any difficulty in finding one suited to the temperament, tastes and circumstances of each individual.

The most complete revolution in customary routine is to be gained by travel, and wherever it is practicable I advise the patient to take a journey. Travel is beneficial to the health of body and mind, and this is precisely the treatment which these victims of insomnia need. The time occupied in the journey should be sufficient to effect a complete alteration in the habits of life. A preliminary sea voyage is an excellent preparation. It is for this reason partly that the visit to Europe is in properly selected cases of such signal advantage. The pure air and the ocean breezes, the broad expanse of sea and sky, all the unaccustomed scenes and incidents of the trip across the Atlantic, perhaps even the sea-sickness, begin the patient's cure. The natural beauties, the architectural and artistic treasures of Europe as well as the various historical associations, lead the patient away from his own troubles and complete his recovery. The springs and baths of Europe, to which it is so much the custom to resort, are of decided benefit to wakeful and to other patients, as much by the careful and systematic manner in which their attractions and properties are utilized as by the character of the waters. We have undoubtedly in this country springs of

equal efficacy to many of those in the old world, but we have not yet learned to convert them into efficient health resorts.

Those who, for any reason whatsoever, cannot take the European trip can find enough within the bounds of their own country to satisfy every taste. They can take ocean voyages along our coasts, they can sail the great lakes, they can visit different sections remarkable for scenic attractions or healthfulness of climate. A leisurely carriage expedition across a state has been known to furnish much enjoyment and rehabilitate impaired health.

It is needless in this presence for me to dilate upon special forms of exercise and out-of-door sports. They all have this in common, that of taking the patient into fresh air, quickening the circulation, changing the current of monotonous and anxious thought and promoting oxygenation. Walking, which is at every one's command, is an excellent species of physical exercise, but is open to one objection, viz.: that it permits a solitary pedestrian to follow his accustomed train of thought. He is apt also to complain of a lack of variety, incident or interest in the exercise. These deficiencies, however, are generally the fault of the patient rather than of the practice. Intently occupied with our own projects we too often lose the habit of observation. We tread the streets or traverse the country road without heeding the objects which we pass. This is one of the customs which our patients must strive to unlearn.

They must not carry their cares with them constantly, but must in their walks cultivate the impersonal point of view. The aspects of nature are ever variable and full of interest to the observant eye. In the crowded streets of the city we may find objects worthy of our attention if we cultivate the faculty of thinking of other matters than our own directly personal concerns. We cannot all be poets. "The poet is born and not made," we are told. Most of the patients of whom I speak, however, have sufficient intellectuality to sympathize with the spirit in which a poet describes an attractive landscape, as we may read in Cowper's "Task" or Wordsworth's "Excursion."

Horseback riding is a form of physical exercise which is highly serviceable in improving the general health and is one of the means which aid in inducing sleep. The old saying that "the outside of a horse is good for the inside of a man" is as true today as when first uttered. The different rates of motion, the routes traversed, the fresh air inhaled and the companionship of an intelligent animal are directly conducive to sound health, strong nerves and the ability to sleep. There are many, however, who are unable to indulge in this form of recreation, and these content themselves with "the silent steed" which

has become so popular. I believe that bicycling is, in the main, a pleasant and healthy diversion. It has the merit of taking the person out-of-doors, and it affords exercise to the muscular system with all the attendant benefits. On the other hand, it cannot be practiced in all weather or at all seasons of the year. I have no doubt that the wheel may be abused and can scarcely approve of its use in some forms of organic disease, but these facts do not invalidate its general utility. Most of the games which are played in the open air are of too violent a nature to be suitable to the class of patients of whom I speak, for most of them have attained or have passed beyond middle age. The young usually need no inducement to sleep at the proper time, at the end of the day's duties and pleasures. But quoits, shuffle-board, croquet, tennis and golf do not require excessive exertion, while they can afford amusement and conduce to a certain moderate and healthy degree of fatigue. Other forms of exercise which produce the same effect will occur to your minds.

It is often advisable to employ tact or artifice in order to interest the patient in these schemes for his welfare. An eccentric French physician, for instance, of whom I have lately read, would sometimes direct a patient to eat an apple or perform some other trivial act at a certain point at a certain hour of the day, the point being carefully chosen at a considerable distance from the patient's abode, the exercise being the direct desired object and not the apple. Such schemes can be readily invented and from their oddity will often be more faithfully observed than more conventional advice.

Most people who have most difficulty in sleeping live in cities. Country people are less exposed to those influences which produce wakefulness. They lead more natural lives. They are early risers, they live in the open air, their occupations involve physical exertion, and at the close of the day they seek their couches betimes and are generally rewarded with sound and refreshing slumbers. Our city patients, however, if convinced of its necessity or desirability, can usually arrange to spend a portion of the year in the country. They should seek to conform their habits to those of the dwellers on the soil. In the country there are multitudinous varieties of not too arduous employment which will restore tranquility to irritable nerves and will prove more truly and beneficially hypnotic than a recourse to drugs. Those who follow such a plan may obey the poet's dictum and "throw physic to the dogs." We read of Mr. Gladstone's delight in personally felling trees upon his estate. It was doubtless to his custom of country activity that the great statesman was largely indebted for the magnificent physical vigor which was the groundwork of his vast and varied intellectual

labors. In consequence, Mr. Gladstone was noted for his ability to sleep. Mr. Gladstone "throughout the whole of his life," wrote Mr. W. T. Stead some years ago, "has had sleep at instant command; he can go to sleep at a moment's notice. \* \* \* When he lays his head upon his pillow he is able to shut his mind off from all the business of life. When he goes to bed it is to sleep, and he sleeps with all his might."

There are some in-door games, as billiards and bagatelle, for example, which necessitate a gentle physical exertion and from which weakly individuals, and particularly women, may derive advantage. Although less beneficial than activity in the open air, they are often available when inclement weather prohibits the less robust from rougher forms of exercise. We may even carry our practice of muscular movements to bed, according to a selection published in a recent number of the *Northwestern Lancet*. A new method of inducing sleep, personally tested by J. B. Learned, is to cause muscular fatigue by exercise carried out in bed. "Lying on his back, the patient first reaches for the foot and head board at the same time. He then raises his head half an inch, at the same time he breathes slowly and deeply about eight inspirations to the minute, which are counted. After about twenty inspirations to the minute, the head, which begins to feel heavy, is dropped. The right foot is then raised, the reaching for the boards and counting being continued, and similarly dropped when fatigued. The left foot goes through the same process. The muscles which are used in reaching for the head and foot boards are then relieved and the body is elevated so that it rests on the head and heels. He then turns on the right side and reaches for the head and foot boards again, and raises first the head and then the foot as before. The same process is gone through on the other side. If sleep has not been induced, the same cycle is gone over again."

Massage. The manipulations and movements constituting massage afford a sort of passive exercise. The physiological effects of massage are comparable to those of active physical exertion, though not identical. The most immediate influence of massage is upon the skin. It increases the volume and the rapidity of the cutaneous circulation. It promotes the secretory and respiratory functions of the integument. A favorable impression is at the same time made upon the nervous end-organs, both sensory and tactile. The invigoration of the surface is transmitted to the central nervous system. Massage promotes the absorption of oxygen and the excretion of waste products. The general nutrition of the patient is decidedly amended by a course of massage. The nerve force of the individual is permanently strengthened. During and sub-

sequent to the practice of massage the blood is temporarily withdrawn from the brain and spinal cord. These results of massage bestow repose upon the nerve centres, allay restlessness, and, therefore, place the patient in the most favorable condition for dropping into a refreshing slumber. This procedure which I can confidently recommend is of signal value as an hypnotic agency. When once witnessed or experienced its efficacy will be undisputed. I am, consequently, in the habit of advising those physicians who have not already done so to inform themselves practically as to the effects of massage and the manner of executing its various manœuvres. The young physician, at the outset of his career, should learn to practice the art of massage. There is many a patient who will esteem highly and compensate liberally a practice which enables him to obtain "kind nature's sweet restorer, balmy sleep." The gratification to both physician and patient is enhanced when the desired end is reached without having recourse to drugs. Massage is of service in many nervous ills besides insomnia, but to speak of other disorders here would be going beyond my subject. At any rate, whether the physician actually performs massage personally or not he should be sufficiently well informed in the art to direct and supervise the operator.

Electricity. The electrical current, more especially the galvanic, has an admirable influence in overcoming chronic wakefulness.

The negative pole, or cathode, is placed at the back of the head and the positive pole, or anode, to which a sponge is attached, moved across the forehead. A force of ten to twenty milliamperes is usually sufficient. The applications are made in the evening as the customary hour for retiring approaches. I have in many instances employed this plan with signal success. It is needless to say that at the same time other and more prominent advantages are gained. The remarkable benefit which electricity produces upon the circulation, the nutrition of muscular tissue and the action on the nervous system tends to the general invigoration of the patient. Electricity is a most valuable therapeutical agent, applicable not only to diseases of the nervous system, but also to a wide range of morbid conditions.

I employ it, for instance, in many cutaneous disorders. Notwithstanding its undoubted efficacy I am of the opinion that it is much less generally utilized by the profession than its power deserves. Every physician should understand the construction and working of a battery and should be competent to make applications of the different forms of this force in suitable cases. By adopting this practice he would discover that he had gained an increased mastery over disease and that in many instances he could succeed in curing his patients with but little aid from drugs.

Electro-Massage. Both electricity and massage act in a similar manner upon the circulation, nerves, and muscles. They may, therefore, as synergists, very appropriately and efficiently be employed in combination. The chemical processes being incessantly carried on within the animal body generate currents. Moreover, it has been shown that irrespective of purely chemical changes the acts of secretion and nutrition give rise to electrical disturbance. Differences in this respect exist between different individuals and between the sexes. It has also been demonstrated that the electricity of man is mostly of the positive variety while that of a woman is more frequently negative. Persons of sanguine temperament have more free electricity than those of phlegmatic disposition. Disturbances of electrical equilibrium are constantly being produced within the human body. These facts are the basis of the phenomena formerly described under the title of "animal magnetism." There is no doubt that the electrical condition of the masseur has an appreciable influence upon the patient subjected to his manipulations. I believe that this aspect of massage has received less attention than it deserves. The direct passage of electrical currents from one body to another stimulates the nutrition of muscle and nerve.

A more purely mechanical combination of electricity and massage is utilized by means of the roller electrode through which either galvanism or faradism may be transmitted. The hand of the manipulator is likewise capable of acting as an electrode and communicating a current, and this is the preferable manner of administering electricity to children and delicate individuals. This electro-massage, practiced by the hand of the operator upon the head and neck of the patient, has a remarkable effect in allaying headache and promoting sleep. The effect of the local massage is furthermore irradiated or reflected throughout the entire body. The repose which follows is sound, and the patient awakes invigorated.

Baths. A warm bath, taken immediately before going to bed, is an efficacious measure which attracts the blood to the surface of the body, relieves the cerebral tension, allays nervous irritability and permits an individual to fall into a calm slumber. The temperature of the water should be 100 degrees F., or a little higher, and the bather should remain in the water for about five minutes. A coarse towel should be used in drying the body. In the summer the victims of insomnia are usually benefited by a residence at the seashore. The stronger among them may be permitted to indulge in a surf bath. The weaker will appreciate the sedative properties of the warm sea-water baths which are provided in the bathing establishments. The sea-air, also, has a decided hypnotic influence.

Diet. The diet of these wakeful subjects should be sufficient, but not profuse. The habits in this regard must be strictly regulated. Many of the men we are called upon to treat are very irregular feeders. They take a slight and hasty breakfast, after which they rush to their places of business. The lunch hour is frequently postponed according to the exigencies of trade. A profitable transaction is often celebrated by some convivial tipping. In the evening probably an elaborate dinner is enjoyed. In other cases the same influences and modes of life which have induced insomnia have also destroyed appetite and impaired digestion. One class of men will be hearty eaters and plethoric, a second set will be thin and anxious of aspect, going to the table as a matter of habit. Each of these types requires appropriate treatment. Those belonging to the first must content themselves with a more meagre diet. We must take measures whereby those of the second class shall have their appetites sharpened and their digestive faculties strengthened. Our female patients are apt to eat too little at lunch and at all times to fancy the tasty but innutritious and indigestible dishes rather than plain but substantial viands.

Physical exercise benefits all classes. It reduces the florid and raises the anæmic. We should advise all our patients in accordance with the general principles of dietetics. The high livers accumulate uric acid and are prone to the ills which that irritant creates in the system. The low diet people acquire gastro-intestinal catarrh and suffer from a train of symptoms equally destructive of rest. Thus a wide field exists for a skillful application of our knowledge of the physiology of digestion and the varied effects of embarrassed digestion. In some cases it is advisable that the patients should partake of some light refreshment before retiring to rest. If the evening meal has been scanty, as may happen with weakly dyspeptics, a glass of milk, beef tea, broth or soup at bedtime, together with a biscuit or two, will attract blood to the digestive organs and away from the brain and, as a consequence, allow the patient to fall into a gentle slumber.

Alcohol. The subject of alcoholic drinks is closely related to that of diet. There are many to whom alcohol is a veritable poison. There are others to whom it is a food. It is incumbent upon us to distinguish the two classes and to give our advice or issue our instructions in accordance with the facts. The florid need no alcohol. The anxious anæmic is often improved by liquor taken in moderation. I am extremely careful in prescribing alcoholic beverages. The drink habit is still more easily acquired than the drug habit and is generally more pernicious. Some unfortunate individuals contract both, and I am desirous that no odium in this matter should rest

upon members of the medical profession. This is one of the responsibilities which rests upon us by virtue of our profession, and it must be faced. I am no advocate of the total abolition of alcohol from the practice of medicine. But I would have every physician exercise as much care in ordering a glass of beer as a dose of hyoscyamine or any other powerful drug. In each case I would prescribe just what liquor and what quantity should be taken and at what hour of the day. Malt liquor has such a hypnotic effect that many cannot drink it during the day on account of its tendency to cause drowsiness. When this is no objection our thin and eager patients will be improved by taking a small quantity of beer or ale with their lunch. A good red wine taken in moderation will often stimulate the appetite and augment the digestive power. It must be remembered that both beer and wine contain nutritious as well as stimulating elements. In those who have attained or are approaching old age and in plethoric individuals whiskey is more advisable than malt or fermented liquors. A temperate glass of whiskey or, in the colder part of the year, of hot Scotch punch, may be taken with advantage. In the summer or whenever preferable the whiskey may be used in the form of milk punch or mixed with lemon juice and sugar. Whiskey should be touched very sparingly during the day. A single moderate glass of whiskey may, in suitable cases, be allowed at lunch.

It is obvious that in these few words concerning the use of alcoholic fluids by the sufferers from insomnia I am far from intending to recommend them as direct hypnotics. This would be very reprehensible practice. I order them, if at all, on the broad principles of general medicine as powerful agents which, in a certain proportion of cases promote nutrition and are therefore useful in conjunction with other measures which have been or will be sketched.

Entertainments. Poor sleepers need diversion. They are poor sleepers, as a rule, precisely because they have been thinking too entirely of themselves and their own affairs, their ventures, their losses, their risks, their anxieties, their griefs, and finally of their sleeplessness. They often become, so to speak, superstitious on the subject of their inability to sleep. This state of mind no doubt has a considerable share in realizing their apprehensions. Therefore, they should be enlivened. They should frequent entertainments. A good dramatic representation will often be of more service to such people than a dose of hypnotic medicine. The music of the theatre, concert or opera has a decidedly beneficial influence. Well rendered music has a powerful effect upon the cerebrum. It stimulates the heart and circulation. It improves secretion. It promotes the processes of general nutrition.

It carries one away, as the expression goes, and raises his mental processes above their general tone. He is lifted for a while out of the harmful routine of habit. The associations also are such as to assist in producing the total effect. The spacious house, the lights, the gay audience, the salutations of friends, all combine in forming an exhilarating agency which goes far toward breaking up the habit of insomnia. The combination alters the current and tone of monotonous thought.

Patients may often be put to sleep by music. The plan is practicable oftener than one might at first think. A wife or a daughter can sing some pleasing air or play upon the piano, organ or violin. A soft and soothing melody, or that style which is well denominated "dreamy," will often woo successfully the drowsy god. I scarcely need say that in approving of entertainments I do not mean to recommend a constant round of social gaiety. A man who has been at work all day does not wish to be dragged away from home night after night.

Hypnotism. What shall I say of hypnotism? The practice has a very significant name in this connection. Hypnotic suggestion has been able to improve digestion and abolish nerve excitability. Such effects are doubtless of a kind to permit sleep independent of direct suggestion. The practice, however, lends itself to so much abuse and is attended by so many drawbacks that it is doubtful how far we are justified in making use of it for clinical purposes. In the consideration of any method it is necessary to balance the disadvantages against the advantages. Sleeplessness is indisputably a great bane, but there are other physical and mental states which are more to be dreaded.

#### MEDICAL TREATMENT.

Notwithstanding our attempts to regulate the lives of wakeful patients in such a manner that the cause of their infirmity shall be permanently removed we are usually, at some time or other, for one reason or another and for a longer or shorter period, compelled to have recourse to medicines.

The office of drugs in the treatment of insomnia differs from that of the measures and expedients upon which I have hitherto dwelt. The physiological remedies act by removing or suppressing the cause of the wakefulness. They build up the system which has been reduced by the wakefulness and also by the associated manifestations of impaired vitality which has been produced by the same cause.

Their influence is more profound, but they are for the most part tardy in their action. On the contrary, medicines are more rapid in their effect, but their influence is of briefer duration. They will seldom produce a permanent cure of chronic cases. They must be employed in con-

junction with the more slowly acting but more effectual device. All the drugs which have power to cause sleep have disadvantages inseparably connected with their continued use. The dose must be gradually increased, they stupefy the mind, weaken the heart and voluntary muscles, lessen the appetite and impair digestion. Therefore, although I do not decry the value of hypnotic drugs, I am disposed to be very circumspect in their employment. I am no therapeutic nihilist. I believe in medicines according to the results of my own experience. The most active are exactly those which may be most potent for harm as well as for good. They must, therefore, be handled with care and judgment. With these preliminary thoughts I venture to give a short review and criticism of our principal hypnotics.

Opium. Opium is the first of these drugs which suggests itself to the mind. It is the oldest, the best known and within its proper sphere the most efficient. The properties of this substance render it an invaluable remedy in many cases of insomnia, more especially those which are associated with pain, restlessness and excitability of the nervous system. It probably serves a greater variety of purposes than any other substance of its class. Opium reduces the volume of the cerebral circulation. It diminishes the activity of the cerebral cells. The continuance of insomnia often produces an irritability of nervous and muscular tissue which can be more notably allayed by opium than by any other remedy.

At the same time the mind is intensely and morbidly active within a restricted range. The patient takes to bed with him his cares and schemes. Various neurotic manifestations arise if this condition continues. The cautious use of opium is of service in modifying the physical conditions upon which these symptoms depend. At all times and with all patients it is our duty to prescribe this substance with circumspection. Proper precautions should be taken whereby the patient may receive the benefits without being exposed to the insidious dangers of the drug.

Opium is an extremely complex substance, and its complete physiological action is no doubt the sum of the total effect of its numerous components. In practice morphine is customarily taken to represent the action of opium. Of late the isolation and study of other alkaloids has placed in our hands several which possess therapeutical efficacy.

Of these the best known is codeine. The operation of this alkaloid is analogous to that of morphine. It is, however, much less apt than the latter to cause disorder of the stomach and bowels. On the other hand, it possesses less anodyne and hypnotic power than morphine. Codeine is beneficial in insomnia caused by spasmodic action or pain.



Quite recently we have been made acquainted with two new derivatives of morphine, heroin and dionin.

Heroin is the diacetic ester of morphine. It is a sedative to the respiratory system. It retards and deepens the respiration and increases the respiratory capacity. It augments also the power of the muscles of inspiration. Heroin markedly relieves the cough of pulmonary affections and by this action it has an indirect hypnotic effect.

Dionin is an ethyl derivative of morphine. This product has been found useful in combating the opium or morphine habit. Opium seems, therefore, to contain both the bane and its antidote. Dionin is soluble in water and may be given either by the mouth or thrown beneath the skin. It relieves the sleeplessness and anxiety which attend the morphine habit.

Chloral. This is a typical hypnotic remedy. It reduces the volume of blood in the brain and produces a condition resembling that which is generally believed to be present in normal sleep. The slumber is sound and refreshing and the patient usually wakes in the morning with a clear head. Chloral is especially useful in congestive headache accompanied by insomnia. In the many forms of disease of the nervous system attended by wakefulness chloral is an efficacious medicine. It is efficient in the restlessness and mania characteristic of paralysis of the insane.

Notwithstanding its excellent qualities chloral requires to be given cautiously, as it is by no means free from danger. Pleased by his first experience the wakeful subject is apt to rely too implicitly on the value of his medicine and to grow careless in its use. At length there comes a night when an unexpected and overwhelming effect is produced upon the heart. The patient falls into a dangerous and, it may be, fatal syncope. This depressant action is due to an influence affecting both the ganglion and the muscular substance of the heart. Death occurs with the heart arrested in diastole. There is another class of cases in which the toxic effect is chronic. The quality of the blood is lowered and muscular debility is extreme. Chloral is particularly dangerous to alcoholic subjects.

The toxic power of chloral is less manifest when it is given by the rectum and this is a manner in which I am prone to have it administered, especially when the patient is a child. A properly apportioned dose is made into an emulsion with egg and used as an enema, or given in the form of a suppository.

Paraldehyde. Paraldehyde is an all important hypnotic remedy. Its physiological and therapeutical effects are similar to those of chloral, but it possesses a greater advantage over the latter substance in being much more safe. Paraldehyde does not cause headache or disturb diges-

tion. It is said, indeed, to facilitate the digestion of fibrin. Paraldehyde promotes diuresis. It is free from any depressant action upon the heart. On account of its peculiar combination of properties this is an advantageous remedy in insomnia dependent upon disease of the kidney, lungs and heart. In cardiac affections I have frequently prescribed twenty drop doses of paraldehyde every hour or two, with a larger quantity—a half to one or even two drachms—at night and thus obtained marked relief of the restlessness and irritability as well as the insomnia. In pulmonary affections attended by insomnia it has also an excellent influence. Not infrequently after its action has been thoroughly established the amount may be temporarily reduced or the drug may be suspended for a time. This remedy has proved of decided advantage in cases of wakefulness due to disease of the higher nerve centres. The diuretic effect of paraldehyde constitutes it an admirable hypnotic in cases of Bright's disease. From its unpleasant smell and taste it is less apt to induce a habit of addiction than most substances of its class.

Bromides. The bromides are frequently made use of in simple insomnia and are comparatively harmless preparations. They produce a sedative effect upon the cerebral functions and allay irritability of sensory nerves. They affect the circulation through their action upon the cardiac ganglia. Nevertheless, when too long continued they impair digestion, impoverish the blood and produce the unpleasant phenomena of bromism. Potassium bromide in large doses causes dilatation of the right heart with reduction of arterial pressure.

Strontium bromide will generally be found preferable in insomnia dependent upon disease of the heart or kidneys and accompanied by gastro-intestinal disorder.

Belladonna. This substance and its active alkaloid may be beneficial in cases of insomnia complicated with neuralgia. This association is not uncommon, especially in those of delicate physique, in women and anæmic subjects.

Hyoscyamus. Hyoscyamus and its alkaloids are of service in the same class of cases in which belladonna is useful. The hypnotic influence of hyoscyamus is more marked than that of the other members of the solanaceæ. The alkaloids of henbane are peculiarly appropriate to the insomnia of lunacy.

Cannabis Indica. In cases of obstinate sleeplessness, particularly when accompanied or caused by pain or spasm, cannabis indica will afford excellent service. I have not infrequently observed it succeed in such cases after the failure of opium. It is likewise a valuable succedaneum to opium in cases where the latter cannot be tolerated. Again, in painful affections of the stomach and bowels causing sleeplessness and also

uterine and ovarian disease this remedy has a remarkably favorable action.

#### OTHER HYPNOTIC REMEDIES.

Insomnia is an urgent symptom and as it depends upon so many causes ingenuity has been rife to discover some ideal hypnotic which should lull to sleep without exerting any injurious effect and without being followed by any obnoxious manifestations. Accordingly, we have had for some years past a number of new hypnotics offered to the profession, most of which have received praise from some who have employed them in clinical experiments. In this list are sulphonal, trional, somnal, hypnal, hypnone, etc. Of these drugs sulphonal has been most largely used and next in order is trional. These two substances are certainly possessed of power.

Most, if not all, of these preparations belong to the alcohol group. Sulphonal not infrequently produces very undesirable after effects and should be administered with caution, if at all, to persons with renal insufficiency. Trional appears to be as efficient as sulphonal and less injurious.

#### COAL-TAR PRODUCTS.

As regards the coal-tar products, although some of them possess undeniable hypnotic power, I make little use of them on account of the decided disadvantages by which they are often accompanied. By relieving pain, restlessness and spasm they will often indirectly have a favorable effect in insomnia. Their beneficial influence, nevertheless, is uncertain and even in medicinal amounts they are very apt to disconcert us by an unexpected toxic manifestation. Among the undesirable symptoms which they are liable to produce I may mention chills, copious perspiration, vomiting and other gastric derangements, cerebral excitement, cyanosis, collapse and eruptions upon the skin. Special care is necessary in administering any of these drugs to children.

#### ADVANTAGES OF THE OFFICIAL HYPNOTIC.

I have made less use of the foregoing unofficial hypnotics than of those which have received the stamp of authority, partly because their composition is suspicious, partly because their action is not superior to that of their older congeners and, finally, for the reason upon which I have tried to lay stress, viz., that I deprecate the employment of mere symptom remedies.

In conclusion, whenever it is necessary to combat sleeplessness with drugs I give the preference to those older remedies which have long been official, and the defects as well as the virtues of which have been so thoroughly studied that we may feel more assurance in their use. I recognize the fact that every powerful drug is capable of doing harm if not judiciously employed. The older remedies, however, exert a less dele-

terious influence on the composition of the blood and are comparatively free from those disastrous consequences which detract from the effect, sometimes so brilliant, of the more recently introduced drugs, above all, of the coal-tar products. In the cases with which we have to deal, *festina lente*—make haste slowly—is a good motto when haste is danger and caution is safety.

I thank you, ladies and gentlemen, for the patience with which you have listened to my remarks. I shall depart for home with the most pleasing recollections of Minneapolis and St. Paul—and the Medical Society of Minnesota. Gatherings such as these are founded primarily, of course, for the interchange of personal views and the advance of the profession of medicine. It is a very happy secondary result that the physicians of different parts of the country have the opportunity of forming personal intimacies and becoming united in the bonds of fraternal affection. Ties of this nature have long bound me indissolubly to Minnesota, and it has certainly been a great gratification to me to renew on the spot associations of which I have ever retained the most pleasing recollections. Again I thank you for your attentive kindness.

1519 Walnut street.

## ORIGINAL ARTICLES.

### RETROVERSION OF THE UTERUS.\*

By FRANKLIN H. MARTIN, M. D.,

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Chicago.

Retro-displacement of the uterus is one of the most important conditions which the gynæcologist and the family physician are called upon to remedy in the treatment of female complaints. It is important because the condition frequently exists; because it produces a long train of symptoms which frequently end in invalidism; and because it is frequently ignored, if discovered at all, by physicians whose experience ought to teach them better.

Because the uterus is a movable organ; because it is behind the bladder which must fill and empty, and in front of the rectum which must distend and contract; because it is subject to the intraabdominal pressure with every inspiration and expiration of the woman; because it is fixed with muscular and elastic supports which protect it from sudden jars; because of all this it does not prove that there can be no normal position of the uterus and hence there can be no pathologic displacement. A man's arm has a normal range of movement in order that it may accommodate itself to its environment and perform its function, but that does not argue against a possibility of pathologic dislocation of the arm.

\*An address delivered before the Section of Gynæcology of the Minnesota State Medical Society, June 23, 1899.

### APPROXIMATE NORMAL POSITION OF THE UTERUS.

In order to diagnose and treat a dislocation of the humerus, one must know the normal anatomy of the parts. While I have reason to believe that there are physicians of reasonable attainments who do not apply this same rule in the practice of pelvic disorders, I affirm that every family physician or gynæcologist who depends upon his own knowledge for making the diagnosis of pelvic difficulties, should not only know pelvic anatomy, but should also be able, by repeated practice, to detect abnormalities.

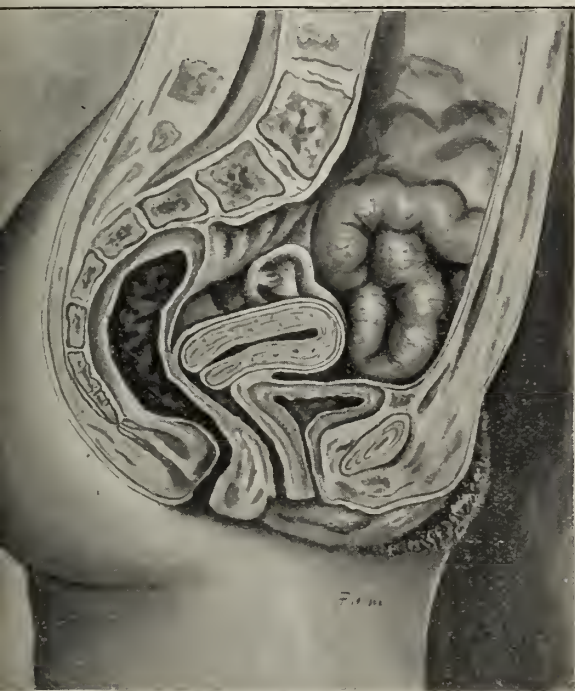


FIGURE 1.

The uterus, Fig. 1, in its normal location, is suspended in the pelvis with the fundus lying a fraction of an inch below a line drawn from the top of the symphysis pubis to the promontory of the sacrum. With the subject in the upright position the body of the uterus inclines forward on an angle of about 45 degrees with the horizon. The cervix lies within an inch and a half of the sacrum. The body of the uterus projects from the top of the vagina in a forward direction at about right angles to that muscular tube. The fundus of the uterus occupies such a position in the pelvis, when normal, that the intraabdominal pressure deflected from the anterior abdominal wall strikes it just posterior to its crest in a direction to force it, if at all, in an anterior direction.

The supports of the uterus are the broad ligaments which suspend it with side expansions,

the vaginal tube, resting upon the peritoneum, supporting the cervix; the two folds of peritoneum, called the sacro-uterine ligaments, holding the cervix near the sacrum, with the anterior vaginal wall, acting as a counterpoise, suspending it in front. The round ligaments act as stays, preventing the uterus from being forced into retroversion by sudden impulses or jars. So that it has supports from almost every point, and in no case are the supports immovable or fixed. It is surrounded with cushioned supports and elastic guys, while its free fundus is embraced in a canopy of soft, ever yielding intestines. No organ in the human body is more carefully protected from violence from without or from its immediate environment from within.

### THE FEMALE PELVIS.

The female pelvis, upon which the destinies of the human race so much depend, is not only a box of wonderful security, but it is a stronghold of marvelous nervous mechanism. The uterus is connected with, and has extensive automatic control of, almost every organ in the body. No other organ, except the heart, has such universal sway over the whole economy. From the time that puberty begins, in early maidenhood, until the well earned rest is secured at the menopause, the immense network of sympathetic nerves surrounding the uterus is ever ready to perform herculean tasks. If conception occurs it must, automatically, at once begin a work which is the most remarkable thing in the world. It compels the heart to send more blood for nourishment of its new life; it compels the brain to create an appetite in the individual; it compels the stomach to digest larger quantities of food and the intestines to increase assimilation. It strengthens and expands the peritoneum; it softens the cartilage of the pelvis; it expands its own supports; it enlarges its environment without pathologic consequences; it develops the breasts and fills them with fluid; and, when, at a certain hour on a certain day the climax of gestation is reached, it touches the spring which sets in motion all of the awful machinery of labor; which controls its own powerfully developed walls; relaxes and lubricates the soft parts through which the child must pass; compels abdominal contraction at the proper time; and, when finally the labors are finished, it telegraphs less blood to the pelvis, more to the breasts. It contracts its own walls, narrows its own blood supply, furnishes an antiseptic fluid of soothing quality for the soft track of its outlet, and in remarkably short time has returned to its normal size and position.

When we stop to think a minute of the wonderful accomplishments of this uterus, and realize that its functions of menstruation or gesta-

tion are constantly maintained for thirty years, it does not seem unreasonable that a displacement of the organ, with a consequent disturbance of its sympathetic nervous connection, will produce disastrous results.

Retroversion of the uterus produces local and remote subjective symptoms.

The local symptoms are produced by the disturbance the dislocated organ produces by pressure on neighboring parts. Constipation may result from direct pressure of the uterus on the lower bowel. Sacralgia, or backache, may be produced by direct pressure of the displaced fundus on the sacral nerves. This displaced fundus may draw upon the support of the bladder, or the displaced cervix, from forward pressure, may too disturb the function of this organ. This displacement of the uterus frequently forms flexures of the broad ligaments which interfere with the return venous circulation of the organ, and produce a passive congestion with symptoms of



FIGURE 2.

heaviness. Pain in the ovaries and tubes may result from the same cause.

The organ, from its increased weight and from lying with its axis parallel with the vagina, Fig. 2, slides into a lower plane of the pelvis and from pressure on the cerebro-spinal nerves of the perineum, gives rise to voluntary efforts which give rise to the distressing symptoms of "bearing down." These symptoms are all aggravated by exercise of the patient and the upright position of the body, because these things exaggerate the displacement. Menstruation is invariably disturbed and more or less pain is seldom absent.

Remote Symptoms. The remote symptoms may be as multitudinous as the nerves which con-

nect the organs of reproduction with other organs of the body. While the uterus in health has such positive influence on the functions of other organs, it is easy to understand how, when in distress, just this intimate connection might disastrously disturb the normal functions of these neighbors. Such is the case. Palpitation of the heart, poor digestion, nausea, intestinal disturbance giving rise to imperfect assimilation, bladder irritation, backache and almost invariably severe headaches, are a few of these symptoms.

General Symptoms. After the suffering woman has been allowed to bear the constantly harrassing symptoms from month to month, with the cause becoming more and more fixed, with poor assimilation leading on to anæmia, with rampant reflexes gradually endangering the balance of the nervous system, we find the subject growing thin in flesh, we find her despondent in spirits, especially aggravated each month when the labor of painful menstruation is super-added, her will force becomes less resistant to the nerve storms, hysteria supervening, and what was once a healthy woman is transformed into a thin, weak, white skinned, aching, despondent, hysteric invalid.

Diagnosis. While the subjective symptoms, already rapidly recited, must give us a clew to the local condition, it is the objective signs, as gained by an examination of the pelvic organs, which must make or confirm our diagnosis.

With a knowledge of the normal conditions well fixed in his mind, the physician should proceed to make a thorough examination of the pelvis. The patient is placed on an office table or bed, with her legs fixed and her feet supported in a pair of stirrups, or on two chairs if the examination is in bed. The examiner, with the index finger of his left hand well soaped or otherwise lubricated, standing or sitting close in front of the patient, between her separated knees, should proceed to make a vaginal digital examination, reserving the strong right hand for external palpation. In an instant he will determine if the perineum is lacerated, whether the anterior or posterior vaginal walls are projecting. He immediately reaches the cervix. If it is well back in the pelvis it would be well nigh impossible for retroversion to exist, because the overhanging sacrum would throw the fundus forward, and by placing the finger in front of the cervix it can be proved by grasping the fundus in front (Fig. 3). If the cervix is well forward and low in the pelvis, then look for the retro-displacement of the fundus, for then by placing the finger in front of the cervix the hand from above will approach it with no fundus to be felt between (Fig. 2). By placing the finger behind the cervix, in such a case, if the fundus is retroverted, it can be palpated in that position, thus proving conclusively that the uterus is retroverted (Fig.

2). While the uterus is grasped in such a position any irregularities of its surface, its size and something in regard to its mobility, can be ascertained. In fact an expert in bimanual palpation of the pelvis can easily, by some such systematic course as described above, determine not



FIGURE 3.

only the position, shape, and size of the uterus, but also the condition of the appendages. If the parts are tender, or the patient a virgin, or the pelvic walls unusually resisting or thick, an anæsthetic should always be given in order to accomplish a thorough examination. In fact it should be followed as a rule that an anæsthetic should be given when an examination without one leaves any doubt. Whenever the uterus appears fixed in retroversion, an anæsthetic should be given in order to confirm the diagnosis, as frequently an apparently adherent uterus becomes dislodged and movable under the influences of ether.

**Treatment.** Without going more fully into etiology, more minutely into methods of examination, or into a more exhaustive study of the anatomy of the pelvis than the foregoing hasty discussion will allow, I must hasten to the more practical part of my subject, viz.: treatment. And here too, I can but touch upon general principles with the elucidation of but one or two important practical applications.

For the treatment of simple persistent retroversion, without adhesions or with lacerations of the perineum or diseased appendages, two possible means of cure may be adopted.

**Without Operation.** One cannot safely promise a cure in any case of retroversion without finally resorting to an operation, but after taking the precaution to explain to the patient, before treatment is begun, that non-operative treatment may fail, one is justified in making an attempt (with patients who can wait) to cure without an operation.

The treatment here should be the replacement of the uterus and the retention of the organ in place by a well fitting Hodge-Smith pessary, or the replacing of the uterus at each treatment by means of well placed tampons, keeping them in position until just before the next treatment, and all this supplemented by a judicious application of local tonics and stimulants.

To be more exact, my method is as follows: I replace the uterus by bimanual manipulation, by forcing the cervix backward, or by knee chest position, Fig. 4, and drawing the fundus forward. I then select a pessary which will lengthen the vagina, thereby keeping the cervix back in the hollow of the sacrum, and whose posterior bow will force the fundus forward.

I then place in the vagina a vaginal electrode, and over the replaced fundus an abdominal sponge electrode and apply a slow break faradic or sinusoidal current of electricity, applying it as strong as the patient will bear without pain and for a period of five minutes. This stimulates all of the muscular supports of the uterus, and that too, when they are in a state of relaxation. The patient is then instructed to get into extreme knee-chest position three times a day, and when in that position, to open the vagina, so that it will be distended with air, by retracting slightly with her finger the perineum. This reverses, temporarily, intraabdominal pressure, throws the uterus forward by gravitation, and forces the cervix into the hollow of the sacrum by ballooning the vagina with air. The patient takes the local stimulation of faradization three times a week, and at each time the uterus is examined to make sure that it remains in place. The surgeon should, by bimanual manipulation, stretch the shortened supports and force the uterus into extreme anteversion at each treatment. After a month's treatment the pessary is carefully withdrawn, the patient is instructed to avoid violent exercise, is cautioned to assume the knee-chest position religiously, in order to avoid a relapse, and to report the following day. At this time the parts are examined, and if the uterus has remained in position for twenty-four hours without support, one should be encouraged. The ordinary treatment should be applied and a two-days' respite given. And so, carefully, these cases have to be nursed, and about one out of every five will reward you with a final cure.

Frequently, after withdrawing the support the first time, at the next visit the patient will



FIGURE 4.

announce a failure, her symptoms having already convinced her of that fact. Another month or even two months' treatment should be advised.

If a well fitting pessary will not be tolerated, then at the end of each treatment, after the uterus is well in position, the patient should be placed in the knee-chest position and with the aid of a perineal retractor and a pair of dressing forceps an elastic wool tampon should be placed in front and below the cervix (Fig. 4). This should be allowed to remain until the following evening when it should be removed by the patient, and an antiseptic douche given. The patient should remember to assume the knee-chest position at least three times a day during the time she is receiving this treatment. All forms of violent exercise should be avoided, and corsets should be abandoned.

These tedious forms of treatment will yield a gratifying result in about one case in five. This small percentage is well worth fighting for, however.

Alexander Operation. What shall we do with the failures under the head of non-adherent, but persistent, retroversions? Unhesitatingly I say: Shorten the round ligaments. These cases require the slightest tension on the part of the round ligaments to make them permanently normal. The operation is safe, and by my method of ligament fixation it is sure.

#### A FEW HINTS ON THE TREATMENT OF URETHRITIS.\*

By GEORGE R. PATTON, A. M., M. D.,

Lake City, Minn.

#### INTRODUCTORY NOTE.

Inasmuch as about 97 per cent. of the cases of urethritis that fall into the hands of the surgeon are specific, that is, due to the specific germ, gonococcus, this paper may be regarded as chiefly directed to the specific urethritis, although the local treatment of the specific variety, it may be here stated, will be equally applicable and curative in the ordinary or non-specific form.

Urethritis in the male is so essentially a local disease, and located comparatively so accessibly, that anyone unacquainted with the subject might be excused for believing it to be easy of cure; but the testimony of experience is a very different tale.

Undoubtedly the majority would eventually get well without any treatment, and we know that many recover in spite of very unskillful measures, but there are not a few cases so influenced by certain causes and conditions pertaining to the individual as to render their cure more difficult than that of any other local affection. Invariable success by any uniform treatment is impossible; that which may speedily cure one case will fail in another; each case,

\*Read before the Wabasha County Medical Society, July 13, 1899.

therefore, must be, as it were, a law unto itself. By carefully investigating the circumstances and peculiarities of each case, success will be the rule and failure the rare exception. Recognizing the fact that we are to be guided by the general principles of surgery, and as the therapeutics of the subject have been ably and exhaustively considered by the recent authorities and text-books, as well as the specific and non-specific causes of urethritis, I desire, in lieu of having anything specially new to present, to suggest the observance of a few measures very promotive of, and, indeed, as I have found, very essential to success.

It goes without saying that all urethral discharges are proverbially annoying and unsatisfactory to treat; no more convincing evidence need be adduced than the diversity of the treatment. Local measures are in the great majority of cases, the best, combined, if requisite, with the ordinary systemic tonics. If the disease is caused, or maintained by renal or vesical irritation, the gouty, rheumatic, or scrofulous diathesis, these states will at the same time require attention.

I do not regard the so-called specifics as such and as peculiarly curative in either specific or non-specific inflammation of the urethra. They are promotive of general depression and disquietude, and generally profoundly disturb the digestive functions. That copaiba, cubeb and santal oil are hurtful rather than curative in some urethral states may not be questioned.

The principal local methods are, of course, the bougie and injection, the rationale of cure being about the same with both, viz.: distension, stimulation and a more or less thorough application of the various agents employed therewith. These ends, one would suppose, might be better attained by injections alone, but the difficulty seems always to have been a want of due thoroughness, precision or certainty in their application.

This desideratum may, I think, be accomplished by the use of an instrument, for which I beg the kind indulgence of the society. I devised it and gave it to the profession (did not patent it) some 38 years ago in Cincinnati, O. The straight one was the first ever constructed, the curved one a few weeks later. Now they may be had of the regular catheter length, from the hands of any surgical instrument maker in various forms and modifications and styled "reverse flow canulas or catheters." Some of the merits of these instruments are: The facility with which a large quantity of either plain or medicated water may be passed through any or every part of the urethra, flushing it out with a full and rapid stream, thereby thoroughly distending, medicating and cleansing it from the deeper seated parts in the direction of the meatus,

thus avoiding the risk apprehended by some from the ordinary syringe of stricture, swelled testicle, and of carrying, or forcing inoculable matter down into the deeper portions of the canal. That the last is possible, by the common method in ordinary urethritis may be made apparent to anyone by inspecting clear water, after having been washed through the urethra by this canula even immediately after the patient has urinated. I advert to this as Prof. Keyes, while ardently advocating injections in both acute and chronic urethritis states: "It is asserted that the injected fluid carries before it the infecting mucus within the urethra and thus extends the disease to the deeper portions of the canal. Supposing this possible, in any case it cannot take place if the patient pass his water before injecting." These canulas may be easily used to advantage with either the ordinary bulb and valve, or with the fountain syringe.

It is unfortunate for our curative efforts that those who consult us for disorders of the urethra are not trustworthy as a class. The abstinence from every kind of irritation, local, general and dietetic, enjoined upon them, is rarely heeded; and this more than all other causes combined, is our greatest obstacle to success. Its observance is by far more important than the taking of drugs. This fact cannot be too peremptorily enforced upon the patient's attention, that, without his rigorous observance of our precautions, without his hearty coöperation in recommended measures of rest, hygiene and regimen, the progress of his case must necessarily be slow; liable to relapse and unsatisfactory, and that a cure, if attainable at all, will result only after many weeks of treatment and suffering, while on the other hand, by assisting as he easily can, our endeavors to cure will not be difficult, nor long delayed. With the individual's willing concurrence, this malady is, save a few exceptional cases, as tractable as acute conjunctivitis.

How shall we secure from our subjects the fulfillment of this very broad therapeutic indication which it is our province and our policy to demand? As the books make no suggestions I will venture to offer one based upon my own observation. Let the preliminary measure, the avant courier of success, so to speak, invariably be an "earnest" from the individual, to ratify the assurance made us that our precepts will be kept inviolably. Our legal brethren, with more of an eye to business than we have, especially with offenders, understand such matters better, and with them a "retainer" is the word. This prerequisite or adjuvant of the treatment is not a mere business precaution, nor vindictive indemnity for past offences on the principle that "those who dance should pay the fiddler," illustrated by some druggists in charging these unfortunates two prices for our prescriptions, but a substantial

appeal to the self-interest of the individual in securing obedience to measures for his own advantage and the safety of our reputation. It is taking an advantage of human nature for the welfare of both parties. The surgeon thereby retains his case till cured, and secures beside future patronage, recommendation and reputation. If, on the other hand, through fear of losing patronage, or from sentiments of false delicacy, he neglects the enforcement of this forerunner of success, he will, in the large majority of cases, in punishment for his pusillanimity be thwarted in his best and most assiduous efforts, be charged with unskillfulness, deserted before having the opportunity to bring his curative efforts to a successful issue, and will, most assuredly, experience humiliation, disappointment and professional and pecuniary loss.

Another obstacle to success arises from the custom among surgeons of intrusting the management of the local means to the patient himself, and this is the main reason, too, that injections have fallen into disuse with some of our best men. A little practice and skill are requisite to inject the urethra properly. When intrusted to the patient himself, much valuable time is lost, as their efforts are usually nugatory. I think that just in proportion as their administration receives, as it should, the personal service of the surgeon, will he be ready to admit their superiority, and favor local treatment in preference to that by the mouth in nearly all cases.

There is evidently a tendency at the present time, as shown by the latest authorities, to use the reputed specifics less, and preferably to prosecute a cure by direct means. Wyeth, in his surgery just published, does not even refer to them, and, indeed, this is not without reason, and is in harmony with the rationale of resolution in all instances. Copaiba, cubeb and santal oil are curative, not by revulsive action nor through a change in the blood modifying nutrition, nor by being secreted by the urethral mucous membrane itself, but only and wholly by their medicinal principles suspended in the urine coming directly into contact with the inflamed mucous membrane during micturition. This truth has again and again been demonstrated. Record, in three several instances, gave copaiba to patients with blenorrhagic urethritis, who had urethral fistulæ, through which all the urine passed. The matter entirely disappeared from their urine, but the discharge from the meatus continued without abatement; this speedily ceased by having the patients inject their urine through that portion of the canal not previously bathed by the urine. Roquette, of Nantes, had a similar experience, Cullierer had a case that persisted in opposition to the balsam. He found a cul de sac communicating with the meatus, which the urine did not penetrate, and which was the source

of a free discharge. By injecting the urine into it the case was quickly cured. Again, M. Hardy, of the Hôpital St. Louis, had females with gonorrhœa affecting both the urethra and vagina treated with cubeb and copaiba. They were cured of the urethritis, but not of the vaginitis. By ordering them to inject their urine into the vagina, a cessation of the discharge soon resulted. If medicinal solutions were applied as thoroughly to the urethral surface throughout its extent, as by the urine during micturition, and without excessive irritation by the means employed, it is entirely probable that urethritis—both benign and specific, would be exclusively treated by direct applications just as in gonorrhœal ophthalmia—copaiba and cubeb would no more be given in one case than in the other. Berkeley Hill makes use of this language on urethritis: "Systemic treatment which only aims at curing by allaying irritation of every kind, is the most expeditious as well as the pleasantest and least dangerous to the patient, and in the long run it is the safest for the reputation of the surgeon." Prof. Hammond, of Bellevue Hospital Medical College, writes: "Copaiba and cubeb do not appear to have much effect. I conduct the treatment altogether by injections." Prof. Bunstead's convictions are thus expressed: "I believe that copaiba, santal oil and cubeb are generally useless, but I find that I am able to use injections with benefit in every stage of the disease."

As a substitute for all the usual remedies in all forms of inflammation of the urethra, I think that in nearly all instances we can accomplish a cure by injecting the urethra with the fenestrated, reverse flow, canula. I have with it quickly and permanently dried up the discharge in the initiatory stage and also in the second stage in cases in which the inflammatory symptoms have not been marked. Two to seven days may be required, flushing twice daily from the bulb forward over the congested urethral membrane one quart of hot water containing four grains of permanganate of zinc. A prescription that I have largely used both in hospital and private practice after the inflammatory symptoms have in a measure subsided is the following:

R

Aquæ Picis Liquidæ ʒxvi  
Zinc oxidi q. s.

To be triturated together in a mortar until the solution is neutral to test paper and then filtered. This I have found particularly serviceable as an injection, and probably it has some specific action due to some of the properties of the tar contained in the water in the solution. My rule has been to use this if after seven days' treatment with the zinc solution a thin, whitish or milky discharge continues. After passing the canula down to the cut-off muscle, that is, to the bulbo-membranous junction, one pint



should be injected with the entire force of the bulb syringe through the urethra twice daily. If at the end of the second week any discharge continues, it may be regarded as certain that the infection has extended beyond the cut-off muscle and invaded the membranous and prostatic urethra to the bladder. This requires that the canula be introduced well within the prostatic urethra before injecting. All cases of gleet that are curable at all may be cured with this instrument by applying suitable medicaments from the prostatic urethra forward. In gleets, any of the salts of zinc are curative, using daily one quart of water containing from one-half a drachm to two drachms of the salt. While admitting, as we have, the measurably, curative properties of the balsams in a majority of cases, it is very desirable to succeed without them if possible to do so. No one can take them long without suffering or disgust; some cannot take them at all, and I fully believe that every case can be cured without them. They are especially objectionable in this that they cause gastric and intestinal irritation, disorder of the kidneys, frequently disturbance of the nervous system and at times cutaneous irritation. It is the advice of Cullierer, Acton, Durkee, Lee, Keys, Belford, and also that of the usual text-books to restrict the use of the santal oil, cubebs and copaiba to the third stage of the disease as especially curative, the third stage beginning at the time when the ardor urinæ has entirely subsided (certainly a very opportune period to begin injections). By this time ten to fourteen days have elapsed and the disease has diffused itself over the subpubic portion of the canal. Their unanimous recommendation of these so-called specifics now is probably due to the fact that their injections, which they admit can cure the accessible anterior portion have failed always in thoroughly reaching the deeper parts, on account of the inefficiency of their employment or the need of a requisite appliance therefor.

#### CHORDEE.

Directing the patient to drink on retiring one pint of any warm demulcent tea containing thirty grains of nitrate of potash will nearly invariably prove successful. The rationale of success is simply this, that the water being decanted in large quantities into the bladder, relatively diminishes the solids, and as the erection of the organ in the latter part of the night is excited ordinarily by the density (stimulation), rather than by the mere bulk of urine, the exciting cause is removed, and with this advantage, too, that micturition in the morning, is not attended with the severe pain that would otherwise be felt.

#### THE SUSPENSORY BANDAGE.

He who neglects this fails to take advantage of a very important element of cure. Fit it al-

ways yourself, the very first day of treatment, see to it that it "binds" nowhere; if uncomfortable to the wearer, you may be sure it does not fit and will do more harm than good. A good suspensory favors the flow of blood from the parts, removes all strain from the spermatic cord, and will shorten considerably the time required for cure. It will nearly constantly prevent epididymitis. In the treatment of 486 cases of urethral discharges up to 1869, I had this complication in seven cases only, not often certainly, as it is the most frequent complication of the disease. In all forms of urethritis, the bowels should be maintained in a soluble condition, as we thereby avert perineal congestion, but drastic purgatives or continued purgation by any means is not recommended, as by the irritation of the rectum the urethra is involved by sympathy.

One practical point and I have done, and that is in using the canula to anoint it with glycerite of starch, never with vaseline or any kind of grease, as these latter agents by smearing the urethral surface prevent the medicated solution from coming into immediate contact with the diseased surface.

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How to Use Cascara Sagrada.—Dr. H. N. Moyer in *Medicine*: For more than twelve years past the writer has used, almost to the exclusion of other drugs, cascara sagrada in the treatment of habitual constipation. He has always used the original fluid extract of Parke, Davis & Co., which contains all the nauseous and bitter properties of the preparation. In prescribing it, the patient receives an ounce of the fluid extract, and with it a dropper and some large-sized capsules. He is instructed to begin with fifteen, twenty, or twenty-five drops, according to the apparent necessities of the particular case. This is to be placed in the capsule just before taking. The dose is always given at night, and as the drug has a very slow action its effects are usually not noted until the following morning. The empty capsule is easily filled by the patient, and the nauseous effect of the drug is not noted. The dose is increased, if needed, by five drops each night, until the quantity is reached that causes a bowel movement; the drug is continued at this dose for a few days, and is then gradually reduced one drop each night until its administration ceases. For instance, if a patient begins with fifteen drops and increases five drops each night until thirty drops are reached, he would then be three days establishing the maximum dose. After a few days would begin a gradual reduction of one drop daily, and the administration of the drug would terminate at the end of thirty days. The administration of this drug in series in this way tends to overcome that tendency to relapse which is so persistent in cases of torpidity of the lower bowel.

# NORTHWESTERN LANCET.

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AUGUST 1, 1899.

## OSTEOPATHY COMPLETE.

Most people do not know at all how the osteopath explains the miracles of healing that he pretends to perform. Of the few who are acquainted with the "science" of osteopathy there are not many who know that there are two rival schools in the field, one of which pronounces the other to be entirely in error as to its pathology, while admitting some good results from the erroneously founded treatment. This ignorance is because comparatively few people have studied a book entitled "Osteopathy Complete," written by one Elmer D. Barber, D. O. D. O., by the way, does not signify Doctor, but Diplomate in Osteopathy, and Diplomate Barber in his book publishes a copy of his degree from the American School of Osteopathy in which one or two interesting points appear: one is that the diplomate's mark in anatomy was 99 out of a possible 100, while in osteopathy he received the maximum. There is no indication on the diploma that anything else but anatomy and osteopathy was studied at the school. Another interesting point in the diploma is the concluding sentence which states that "Elmer D. Barber, having attended a full course of Lectures on and Demonstrations of Osteopathy, \* \* \* \* is hereby conferred by me with the title Diplomate in Osteopathy." Signed, "A. J. Still, Discover." In very fine print it is stated that "The American School of Osteopathy teaches and has for its objects the keeping and maintaining a complete circuit of the forces of the motor, sensory and sympathetic nerves to and from the brain and all the organs,

tissues," etc. From these extracts it is evident that osteopathy is as original in its grammar as in its method of healing, although in justice it should be said that "to teach a complete circuit of the forces," etc., may be no more difficult than to perform some of the other wonders of osteopathy, that is, if one only knows how.

What a "Discover" is does not appear to the uninitiated, but the A. J. Still, who signs the diploma, is the great high priest and original inventor of osteopathy, so that it sounds like ingratitude when his pupil, Barber, speaks of him as a "bone doctor," intimates that his theory of dislocations as a universal cause of disease is a humbug and uses the following language: "While it is our desire to give Dr. Still credit for any points which he has discovered, we must differ with him as to the true cause of the results reached by the Osteopath. While the good Doctor believes that nearly all diseases are caused by dislocated bones, nearly always finding them and thereby winning for himself the name of 'Bone Doctor,' in our practice we never find a great number of dislocations and by the same manipulations effect the same cures as Dr. Still. If a bone is really dislocated and has been in that condition for years, the dislocation can not be reduced; but if the muscles are contracted, causing a stiff joint or depressing the ribs, they can be quickly relieved by manipulation, and the patient is easily led to believe that the bone was dislocated." Again later on, after describing in detail osteopathic treatment: "While this treatment will improve the action and remove the pain in stiff, chronic dislocated joints, the dislocation can never be reduced. We have seen it tried, and tried it ourselves a great many times, meeting with no success where there was really a dislocation of long standing. There are a great many cases where the patient is suffering from rheumatism or a similar trouble in which the muscles are contracted, and he can easily be led to believe that a dislocation does really exist, and that the operator who simply stretches the muscles has reduced the imaginary dislocation. This we believe to be the case regarding the many dislocated ribs found by the average 'bone doctor.'"

There is method in Diplomate Barber's repudiation of the doctrine of universal dislocation upon which the original osteopathy was founded

as upon a rock. He has a theory of his own to substitute for it, that is, "the true cause of many diseases may be traced to some muscle which has contracted and for some unaccountable reason has failed to relax, thus interfering with all the forces of life." The manipulations of the osteopath accomplish their results, therefore, not by reducing dislocations, but by overcoming contractions of muscles.

The application of this general principle to the case of particular diseases leads to some statements which will certainly surprise if not actually startle the practitioner who has studied medicine in the ordinary way. For instance, should the contracted muscle be in the thigh, obstructing the femoral artery, the book says: "We have cold feet and limbs on one side of the obstruction, and heart disease on the other. If the veins returning the blood are obstructed in the same region, we may have either dropsy, inflammatory rheumatism, erysipelas, eczema or varicose veins, caused by the stagnant, pent-up blood, on one side, and heart disease on the other." In speaking of consumption, comes this surprising statement: "We have established the fact, beyond the shadow of a doubt, that it is the steady pressure of the contracting muscles (of the chest) that causes this dread disease, and experience has taught us that until tuberculosis sets in it can be cured."

Brain fever is thus dealt with: "Brain fever, usually fatal when treated by the old method, can be traced directly to a contraction of the muscles of the neck, obstructing the returning blood. \* \* \* \* We have yet to find a case of brain fever that, if taken in any reasonable time, can not be instantly relieved, and in a comparatively short time cured, by our Brain Fever Treatment."

It is unnecessary to multiply extracts from the book; those quoted are a fair sample of its contents. Were such a work written in jest as a caricature of the extravagant theories in medicine that have sometimes prevailed it would be considered a good take-off. But the humor of "Osteopathy Complete" is entirely unintentional. It is meant to be taken seriously; and if its writer really deserved the maximum mark in anatomy credited upon his diploma he must have laughed in his sleeve to think that any should be credulous enough to believe the arrant nonsense of his book.

## REPORTS OF SOCIETIES.

### WABASHA COUNTY MEDICAL SOCIETY.

W. F. WILSON, M. D., Secretary.

The annual meeting of the Wabasha County Medical Society was held at Plainview, Thursday, July 13. The following papers were read and discussed:

Report of a Case of Appendicitis, by Dr. W. T. Adams, Elgin.

Symptoms and Diagnosis of Chronic Interstitial Nephritis, by Dr. Christopher Graham, of Rochester.

Treatment of Inflammation of the Urethra, by Dr. Geo. R. Patton, Lake City.

Observations in New York, Philadelphia, Baltimore, and at the American Medical Association, by Dr. L. E. Claydon, Mazeppa.

Some Chicago Methods, by Dr. W. F. Wilson, Lake City.

Chronic Gastritis, by Dr. J. A. Slocumb, Plainview.

Catarrhal Pneumonia, by Dr. E. H. Bayley, Lake City.

Dr. Smith, of Crookston, Minn., being present, was made an honorary member of the society.

A vote of thanks was extended to Dr. Geo. R. Patton for sending his very interesting paper to be read by the secretary. The following officers were elected for the ensuing year:

President: Dr. E. H. Bayley, Lake City.

Vice-President: Dr. J. A. Slocumb, Plainview.

Secretary and Treasurer: Dr. W. F. Wilson, Lake City.

It was voted to hold the next meeting at Lake City on the second Thursday in July, 1900.

## MISCELLANY.

### SOUTHERN MINNESOTA MEDICAL ASSOCIATION.

The program of the eighth annual meeting to be held at Owatonna on August 3 will be as follows:

1. Invocation, Rev. G. P. Magill, Owatonna.
2. Progress in Medical Diagnosis—President's Address—Dr. H. H. Witherstine, Rochester.
3. The Lithæmic Habit, Dr. Florence C. Baier, Owatonna.
4. Observations on Diagnosis of Diseases of Children, Dr. L. E. Evens, Little Cedar, Iowa.
5. Some Varieties of Aneurism, Dr. C. H. Mayo, Rochester.
6. Are Antiseptics Necessary in Obstetrics? Dr. J. Palmer Johnson, Owatonna.
7. Dysentery, Dr. E. H. Bayley, Lake City.

8. Gall Stones, Dr. W. J. Mayo, Rochester. Discussion will be opened by Dr. J. E. Moore, of Minneapolis.

9. Report of a Fatal Case of Embolism in a Child Eighteen Months Old, Dr. W. T. Adams, Elgin.

10. Concerning Events in the History of Medicine, Franklin Staples, M. D., Winona.

11. Correspondence of Vital to Electric Force, Dr. A. S. Adams, Rochester.

12. Prophylaxis of Contagious Diseases, Dr. E. E. Bigelow, Owatonna.

#### AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

The twelfth annual meeting of this association will be held at Indianapolis, September 19, 20 and 21, 1899. The program is outlined as follows:

1. The president's address, Edward J. Ill, Newark.

2. Three rare cases of kidney cyst, J. F. Baldwin, Columbus.

3. Postpartum repair of lacerations of the cervix uteri, Clinton Cushing, Washington.

4. The gonorrhœal puerperium, Charles G. Gunston, Boston.

5. Paper, Rufus B. Hall, Cincinnati.

6. Injury to ureter in abdominal section, L. H. Dunning, Indianapolis.

7. Paper, J. B. Murphy, Chicago.

8. Coccygeal dermoid fistulæ, Robert T. Morris, New York.

9. Paper, X. O. Werder, Pittsburg.

10. Paper, Walter A. Jayne, Colorado.

11. Paper, C. C. Frederick, Buffalo.

12. Paper, Walter B. Dorsett, St. Louis.

13. Paper, J. Henry Carstens, Detroit.

14. Choice of method for total hysterectomy and some points of technique, B. Sherwood-Dunn, Boston.

15. Present position of gall-stone surgery with report of cases, William Wotkyns Seymour, Troy.

16. Paper, John B. Deaver, Philadelphia.

17. What shall we do with the post-operative hemorrhage of celiotomy? D. Tod Gilliam, Columbus.

18. Paper, M. Rosenwasser, Cleveland.

Choice of operative method from a mortality point of view, Joseph Price, Philadelphia.

20. Shall we operate during the viability of the fœtus when at or near term? L. H. Dunning, Indianapolis.

21. The deleterious influence of tea and coffee in a certain class of gynecological cases, Walter B. Chase, Brooklyn.

22. One form of ovarian disease not generally recognized, W. H. Humiston, Cleveland.

23. Personal experience with uterine fibroids, Henry D. Ingraham, Buffalo.

24. Midsummer operations, Joseph Price,  
25. Observations respecting the symptoms and treatment of the menopause, Augustus P. Clarke, Cambridge.

26. Paper, Charles Stover, Amsterdam.

27. A simple, effective and æsthetic operation for shortening the round ligaments, H. W. Longyear, Detroit.

28. Some observations, chiefly clinical, upon the temperature after intraperitoneal operations, L. S. McMurtry, Louisville.

29. Rupture of the puerperal uterus, with cases, James F. W. Ross, Toronto.

The titles of papers are announced in the order of their reception. The permanent program will be classified and issued August 25th, after which date no further titles can be added.

#### PUBLISHER'S ANNOUNCEMENTS.

Mr. W. B. Saunders, publisher, of Philadelphia, announces the following books for early publication:

The International Text-Book of Surgery: In two volumes. By American and British authors. Edited by J. Collins Warren, M. D. LL. D., Professor of Surgery, Harvard Medical School, Boston; Surgeon to the Massachusetts General Hospital; and A. Pearce Gould, M. S., F. R. C. S., Eng., Lecturer on Practical Surgery and Teacher of Operative Surgery, Middlesex Hospital Medical School; Surgeon to the Middlesex Hospital, London, England. Vol. I. Handsome octavo volume of about 950 pages, with over 400 beautiful illustrations in the text, and 9 lithographic plates.

Heisler's Embryology. A Text-Book of Embryology. By John C. Heisler, M. D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. 12mo volume of about 325 pages, handsomely illustrated.

Kyle on the Nose and Throat. Disease of the Nose and Throat. By D. Braden Kyle, M. D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia; Consulting Laryngologist, Rhinologist, and Otologist, St. Agnes' Hospital. Octavo volume of about 630 pages, with over 150 illustrations and 6 lithographic plates.

Pryor—Pelvic Inflammations. The Treatment of Pelvic Inflammations through the Vagina. By W. R. Pryor, M. D., Professor of Gynecology in the New York Polyclinic. 12mo volume of about 250 pages, handsomely illustrated.

Abbott on Transmissible Diseases. The Hygiene of Transmissible Diseases: their Causation, Modes of Dissemination, and Methods of Prevention. By A. C. Abbott, M. D., Professor of Hygiene in the University of Pennsylvania; Director of the Laboratory of Hygiene. Octavo

volume of about 325 pages, containing a number of charts and maps, and numerous illustrations.

Jackson—Diseases of the Eye. A Manual of Diseases of the Eye. By Edward Jackson, A. M., M. D., late Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine. 12mo volume of over 500 pages, with about 175 beautiful illustrations from drawings by the author.

### THE AUGUST MAGAZINES.

The Atlantic opens with an article by John Muir, who gives a glowing account of the "Yosemite National Park," describing its natural beauties and wonders, especially its remarkable glacial phenomena, which are so remarkable as to attract the attention even of Indians and animals. Jacob A. Riis, in his series of articles, deals with "The Tenant," who constitutes quite as great a problem as "The Tenement." Henry D. Sedgwick, Jr., contributes an appreciative estimate of the career and writings of Lord Macaulay, whom he looks upon as a typical Englishman and English historian, agreeing with Froude that he was the true representative of his age.

In His Brother's Brother, Colonel T. W. Higginson writes delightfully about the late John Holmes, the less famous, but to many minds not less able, younger brother of the Autocrat; and furnishes bon-mots, anecdotes, and quotations, which go far to justify his friends' belief as to the position that John Holmes might have achieved had he chosen to enter the literary arena.

John Burroughs deals with Tolstoi's views of art, and shows that the work of the artist—poet, painter, or sculptor—is not to preach nor to teach, but to "portray and create, and have ends as universal as nature." The editor has a valuable article on "The Break-up of China and Our Interest in It." Prince Kropotkin continues his delightful autobiography, while the stories of the issue are excellent.

Lippincott's complete story is entitled "Fortune's Vassals," and is written by Sarah Barnwell Elliott, who has produced some of our best short stories. Among the excellent articles in the number, special mention is due to "The Court of Judge Lynch," by Maurice Thompson; "Wireless Telegraphy Through Scientific Eyes," by George-F. Barker, LL. D.; and "The Salon in Old Philadelphia," by Anne Hollingsworth Wharton. With so excellent a complete novel as that of Mrs. Elliott and with other articles not mentioned above, it is not surprising that Lippincott occupies a field by itself, and has a circulation approaching the illustrated monthlies.

Scribner's is a fiction number, short stories occupying much of the issue; and they are stories worthy the place they occupy. It was a happy thought, conceived some ten years ago, to make the midsummer number of such a magazine a short-story number; and the issue of to-day is by far the best given the public. But this midsummer number has many other good things in it, notably Senator Hoar's second article on Webster, and Sidney Colvin's "The Letters of Robert Louis Stevenson."

The Review of Reviews has for special features an illustrated sketch of the late Robert Bonner, by E. J. Edwards; an account of the preparations for the coming yacht race for the America's cup, with the record of past contests (fully illustrated); a study of "Porto Rico From a Woman's Point of View," by Mrs. Guy V. Henry; the story of the recent defeat of "seven-day-journalism" in London, by Dr. Henry S. Lunn; a paper on "Education in the Southern States," by Hon. J. L. M. Curry; a presentation of the American side of the Alaskan boundary dispute, by William H. Lewis; and an article on "Play as a Factor in Social and Educational Reforms," by Prof. E. A. Kirkpatrick. In the editorial department of "The Progress of the World" especial attention is given to the educational situation in the South and to the problems of civil service reform. The editor also comments on the newspaper censorship at Manila and the fitness of Gen. Otis for his post, on Secretary Alger's resignation, on the Buffalo conference of political and social reformers, and on the work of the peace conference at The Hague.

The Ladies' Home Journal numbers among the contributors to its midsummer issue such names as the following: Hamlin Garland, Anthony Hope, John Kendrick Bangs, Harold Richard Vynne, Anna Robeson Brown, "Josiah Allen's Wife," Clara Morris, Kate Writing Patch and Anna Farquhar. The midsummer fiction number of the Journal is in many respects a notable magazine. It has brought together in a single issue some of the most popular story-writers, and the most capable black-and-white artists to illustrate their work. Fiction, of course, predominates, but there is an abundance of timely, practical articles especially appealing to home and family interests and tending to lighten and brighten women's work.

The Cosmopolitan is barely described by calling it "richly illustrated," there being in this issue one hundred and forty-six different illustrations of all sorts and sizes and not one of them commonplace or uninteresting. The literary features of the magazine vie with the pictorial, the whole forming a most attractive magazine for summer reading.

## NOTES.

### Sight-Seer's Headache.

There are, no doubt, very many important uses for antikamnia, of which physicians as a rule may be uninformed. A five-grain antikamnia tablet prescribed for patients before starting on an outing, and this includes tourists, picnickers, bicyclers, and in fact, anybody who is out in the sun and air all day, will entirely prevent that demoralizing headache which frequently mars the pleasure of such an occasion. This applies equally to women on shopping tours, and especially to those who invariably come home cross and out of sorts, with a wretched "sight-seer's headache." The nervous headache and irritable condition of the busy business man is prevented by the timely use of a ten-grain dose. Every bicycle rider, after a hard run, should take two five-grain tablets on going to bed. In the morning he will awake minus the usual muscular pains, aches and soreness. As a cure and preventive of the pains peculiar to women at time of period, antikamnia is unequalled and unaccompanied by habit or unpleasant after-effect. If the pain is over the lower border of the liver, or lower part of the stomach, or, in short, be it headache, sideache, backache, or pain of any other description caused by suppressed or irregular menstruation, it will yield to two five-grain tablets. This dose may be repeated in an hour or two, if needed.

### Quality vs. Price.

Commenting on an advertisement in a recent issue of the Retrospect, the editor writes. A fact that is frequently overlooked, viz., that where a difference may exist in two remedies, as regards price, with apparently identical formulæ, there may also be a difference in quality. A manufacturer charging a fair price for a preparation can undoubtedly better afford to give it more attention and use a better quality of drugs than one who undersells to such an extent as must necessarily jeopardize the quality of the remedy supplied. In medicine as in any other commercial line, it is often advisable to pay the better price and get the better article. For instance the original pill may contain one grain of a certain drug and an imitation of apparently the same formula contain one grain of the same named drug, yet the drug in the original may be pure and more active, and cost considerably more than the cheaper imitation. It is a mistake to simply compare formulæ, and imagine one make as good as another, buy the cheaper one. The only criterion of therapeutic value is the actual therapeutic effect. A pill made with a view to subsequent price-cutting is not as reliable a remedy as a pill of the same formula, during the

manufacture of which no expense is spared. A physician will often prescribe a certain remedy, specifying a certain make and be nonplussed at the patient not improving, when the remedy he indicates has many times previously given him satisfactory results in similar cases. The cause frequently lies in the fact that he has gotten a preparation possibly bearing similar title and formula, but which has been compounded with a view to underselling the original and successful remedy. And the result from getting the cheaper remedy cannot be otherwise than unsatisfactory. It is to be deplored that when a manufacturer originates a successful remedy, imitations immediately spring up. The only claim that these imitations offer is price. We never heard of an imitation hoisting the standard of superiority. Trading upon the reputation built up by the original, it competes by quoting prices that often should cause physicians to think twice before using the imitation, and should they decide on the latter and be disappointed in the therapeutic effect, then the original should be prescribed before condemning the preparation. Disappointment in therapeutical effect may often mean that a patient suffers through non-effect of an indicated remedy, may even sacrifice life. Therefore it is also advisable to specify the best and be sure of getting the anticipated effects of all remedies that may be prescribed. Let physicians by specification demonstrate their approval of remedies bearing the stamp of superiority rather than by a false economy accept a cheaper substitute—"In medicina qualitas prima est."

A practitioner devoting especial attention to the diseases of children says:

"In the treatment of choleraic diarrhoea we are safe, it matters not at what time we may be called, in administering some antiseptic medication, something which will prevent fermentation, and have a destructive effect upon the septic germs more than likely present in the alimentary canal. Happy effects are often secured by the use of Listerine properly diluted; a favorite prescription is the following: Lambert's Listerine, glycerine (c. p.), syr. simpl., aquæ cinnamon, aa  $\frac{3}{j}$ , M. Sig. Teaspoonful every one, two or three hours, as may be indicated. Taking into consideration the component parts of Listerine, it impresses me favorably as a prophylactic and remedial agent for cholera, along with other intestinal disturbances. The eucalyptus, thyme, gaultheria and boric acid which it contains are all antagonistic to germ life and oppose fermentation. The preliminary diarrhoea (cholera, as it is called) may well receive teaspoonful doses of Listerine combined with the same amount of glycerine; in fact, I should be inclined to recommend to the laity this combination as a prophylactic measure."

## ORIGINAL ARTICLES.

## THE DETERMINATION OF SEX.\*

BY F. A. DUNSMOOR, M. D.,

Minneapolis.

The announcement of Dr. Schenk and the plain statement which he makes of other theories than his own, tend to make popular such investigation as shall result in a more definite proof of the true cause of the production of either sex.

In preparing for this essay, I have written to stock-breeders, whether of cattle, sheep, horses, or poultry; to physicians, physiologists, and thoughtful parents; and while there is a diversity of opinions, the deductions following are the results of such inquiry, reading and personal experiences. We may begin by announcing our belief in the "Thury" theory.

Schenk quotes Thury's theory to be that the cause of sex lies in the ovum developing itself in the ovary, and the degree of its ripeness is the one factor in the development of one sex or the other. Thus in the case of its having reached the highest degree of ripeness at the time of its fecundation, a male is the result; and the opposite is true when the ovum may be said to be in its green or immature stage. In my own opinion, maturity does not bear any relation to the time and the development of the ovum in the ovary, but that ripeness depends upon the time which elapses between the date when the ovum is liberated from the ovary, until it becomes impregnated by the spermatozoa. In other words, the ovule is green when it first escapes from the ovary, and very ripe when it leaves the uterus. I know in elaborating this theory, that we must note exceptions to the rule, and that in the human species, at least, the ovum is not invariably liberated from the ovary at the time of the menstrual flow, although it is universally known that this is usually the case. It has been demonstrated that some women ovulate and menstruate at different periods, and that truth itself is a valuable factor in my mind in establishing the general proof of the Thury system, since it explains certain cases which appear to contradict that theory. For instance, if it be shown that a woman ovulates subsequent to the menstrual flow, we must allow the same amount of time to elapse after the ovulation for ripening, as in normal cases from the date of menstruation. This theory does not consider that the influence of food, climate, vigor or race, has anything to do

with the ripening process of the female ovum, which alone determines the sex.

Moses evidently knew something of the Thury theory in his day, since he established a law prohibiting cohabitation for seven days after menstruation. It is not unreasonable to infer that the great law-giver was a believer in the theory, and that since he desired for his race as many males as possible for warriors, I think he made this law looking toward that end, as much as for sanitary reasons.

Mayrhofer believes that superior development in either parent enables him or her, as the case may be, to reproduce the same sex.

The theory of Hencke, that the right organ of generation begets males, and the left females, is quite prevalent even at this date. Hencke believed that the influence of one testicle could be controlled without removal, while great stress is put on the observance of such positions during intercourse as shall make it possible for the spermatozoa to enter the Fallopian tube of the corresponding side to the testicle used.

There are many reports from other observers who hold to the belief of cross heredity, that is, that the feeble parent reproduced its own sex.

As will be seen by letters received, some breeders believe that the female produces female ovules or offspring one month, and male the next.

The following quotations from Schenk's book, made the pith of his theory. Tables of food, urinary examinations and experiments are omitted:

"A ripe, fertilizable ovum in the ovary of a woman whose urine habitually contains sugar, has a tendency, when the proper conditions are supplied, to develop into a female. In consequence it is in such cases from the outset possible, without exercising any influence over the mother, without adopting any diet, to anticipate, after a conception, the birth of a female individual."

"When the diet is altered, it is necessary to select in such a way that the nitrogenous substances may predominate and that the carbohydrates may be excluded as far as possible. Of course, a sufficient quantity of fat must be added to the food."

"The treatment consists in giving the mother a highly nitrogenous diet with fat, and adding only so much carbohydrate as is absolutely necessary to prevent its want being felt."

"When the ovule of a human female, dieted in this way, becomes fertilized, it has been so far ripened by the process of nutrition conducted in the organism of the mother that when it at-

\*Read before the Section of Gynecology of the Minnesota State Medical Society, June 23, 1899.

tains the stage of development it resolves itself into cells which compose an organism containing male characteristics."

"To me, (Schenk) however, the ripeness seems to depend upon the process of physiological combustion in the organism of the mother. According to Thury, no attention need be paid by us to the ripeness for fructification, as this ripeness is attained independently of our interference. But, on the other hand, our influence has the effect of producing a male ovum out of the ovule ready to be fructified."

"If the dieting of a woman in the way we recommend is practicable, and of definite effect upon the development of the future sex, we arrive at a conclusion which may be summed up as follows: If a woman can be dieted according to our method, she can reach a stage in which she becomes sexually superior to the man, and her offspring will then be male, in accordance with the law of cross heredity of sex."

"The eminent naturalist Born, of Breslau, made a long series of experiments which are of the highest interest in reference to the doctrine of the origin of sex. It is easy to fertilize frogs' eggs artificially. The ripe eggs are taken from the female, and the testicles of the male rubbed with water. This fluid, which now contains spermatozoa, serves to fertilize the eggs. Born observed during his study of the course of development, that the effect of his breeding as regarded sex, was to produce 95 per cent. of females. This number is evidently so remarkable that it ought to secure particular attention. No such extreme contrast between the numbers of males and females is to be found among the frogs that develop freely under natural circumstances. It seemed to Born that his result was to be referred to insufficient nourishment, and that the tadpoles being somewhat unfavorably circumstanced, had not been able to attain the development of the stronger sex."

Our deduction is that eggs being thus artificially liberated from the frog are necessarily green; that the fertilization of the eggs took place at once. There was no time for the ripening as of the normal deposit, while waiting the coming of the male. That time and not nourishment, had to do with the convincing percentage of females in this experiment.

Again—The same general law exists for human beings as for lower animals. First, the female's eggs or ovules contain the coming being. It is influenced in character and form by the male germ, and its sex, by its own progress of development, which clinical experience shows is dependent upon its own age.

We have learned that the most probable time for conception is immediately after the menstrual period, and many women at the French capital have been so trained that they are able to deter-

mine by observation when the ovule passes from the vulva, thus permitting them to be free from anxiety concerning the possibility of pregnancy during the remainder of the time between their periods of menstruation.

Most of our women are not so fortunate, else we should be able to distinctly state the length of time requisite for the ovum to pass from the ovary to the vulva, though physiologists and experience teach us that the journey is usually accomplished by the fifteenth day subsequent to the menstrual flow, and earlier in the majority of cases.

Before I had begun the study of medicine, I had observed that thoughtful horse breeders desiring females, brought the mares to be "stinted" immediately after they were discovered to be in heat, or rut; while those desiring male colts delayed the possibility of conception until the last of the "season," or as the mare was going out of heat. The same was true with cattle and other animals.

In answer to my letters and inquiries, some of the physicians have answered as a knock-down argument, that frequently twins are born, one of which is a male and the other a female; but I have yet to learn of the birth of twins of different sex when enveloped in the same chorion, although the placental attachment may be common. Again, it is possible for conception to take place in a woman already pregnant; the difference has been as much as 120 days.

Armadilloes produce all young in one litter, which are normally developed in a single chorion, but are of the same sex.

As physicians we are well aware that conception may take place in the uterus itself, or in its cornua, Fallopian tubes, or even in the free peritoneal cavity itself. Reasoning a priori, we should say that conception which takes place outside of the uterus ordinarily should produce females, since the ovum would be likely to be more immature than that which was impregnated within the uterus. The length of time between the liberation of the ovum and its engagement in the Fallopian tube is unknown; but it has been demonstrated that when the ovary has been removed on one side, and the tube removed on the opposite side, pregnancy has occurred, thus showing that the ovum must travel across the pelvis, and into the uterus, through the opposite tube. Such instances should produce males, since the ovum would naturally be considerably older by the time it had reached the uterine cavity and met the male germ. Another apparent exception to these rules is due to the fact that pregnancy may take place immediately before the expected menstrual period, and the product in this case would be female; not that the ovum liberated at the previous menstrual epoch was present and overripe, but that sper-



matozoa were already present in the horn or tube, and met the immature ovum of the coming menses, conception taking place before the menstrual flow appeared.

#### EXPERIMENTS.

Cornaz used cows in the support of Thury's theory. He had twenty-nine cows impregnated, with attention to the rutting time, and from these received twenty-two females and seven males; and the experiment was repeated in the French State Domain, exactly proving the Thury proposition.

Albini, in 1868, in his great poultry yards at Naples, supported Thury's theory.

From illegitimate births, more girls result than from marriage. Also the greater number of females are among the first born. In each of these, we may readily conclude in support of our theory, since the female is the most easily excitable near the menstrual period, and from the fact that the deliberate prevention of conception is not so likely to take place in such cases, as in the following years of married life; while the fact that many boys appear in families later, is often due to the under estimating on the part of the parents as to the time when the ovum was supposed to be passed, and consequently the ovum is in its ripest stage when impregnated.

In conclusion, we may say the great preponderance of clinical observation and report is, that in animals and human beings conceptions occurring late in the intermenstrual period bring forth males. For the same reason, mothers carrying the coming child beyond full term, give birth to boys; unless the date of expected confinement be exceeded by eighteen to twenty days, when a female may be expected, since conception takes place then at the beginning of the menstrual period, when the flow was missed. What it is, beyond time, development or ripeness of the female ovule which produces these results we do not know, and the observations of embryologists do not help us. While there has been plenty of time, spermatozooids and microscopes, no one has separated male or female germs from the semen produced by man; nor is there a report of the difference when a man possesses either the right or left testicle only.

From all reports and observations, the dividing line between the sexes is about the eighth day after the menstrual flow ceases.

A letter of inquiry was sent to a number of physicians, veterinarians and breeders asking opinions as to the possibility of controlling sex in offspring. Of twenty-five answers received thirteen indicated a belief on the part of the writer that sex could be controlled while twelve thought the contrary. Most of those who replied affirmatively favored the ripeness of the ovule theory and acted upon it practically.

The following letters are specimens of the answers received:

G. H. Seeley, of Oakland stock farm, Menomonic, Wisconsin, writes:

"Replying to your favor of the 20th inst., in regard to controlling the sexes and with a desire to give you all the information of our personal experience in this direction, have to say we experimented a number of seasons with a view of demonstrating this theory.

"On referring to our stud book, season of 1895, I note the record of twenty mares stunted on the first of their period, [early as they would receive the horse], with the following results—seven males and thirteen females. The season of 1896, twenty-five mares were bred the same way, they produced fifteen males and ten females.

"Also with our herd of Red Polled cattle. For two seasons we permitted the bull to run with the herd, a cow coming in season, he would of course, take advantage of early as possible; the percentage of sex for the two seasons being nearly equal. Mares have been regular producers for a number of years and without exception throw the same sex year after year. We therefore conclude that nature alone holds the key, and the scientist must take refuge in the dark unfathomed recesses of protoplasm."

Dr. W. E. Daniels, of Madison, South Dakota, says:

"Your letter of March 20, lies before me and I note your question, can we control the sex in desired offspring?

"I do not know as I can give you anything new, but can give you what I have observed.

"As I am a lover and breeder of greyhounds, I have noted this: Excite the male and let him cover the bitch late in her period, the result will be three to five good, healthy pups, and usually four out of five will be dogs. Again, place the dog and slut together early and allow them to remain together, the result will be five to eleven pups, with seven to nine sluts in the 'batch.'

"In the human family I have noticed this: If the father is decidedly sexed and the mother is inclined to feebleness or not strongly sexed, the result will usually be males. I think all things being equal, father and mother equally sexed, late conception will produce males, while early (just before or immediately after flow), will produce females, but I think temperament, strongly and weakly sexed must be taken into consideration."

From the Village Farm, East Aurora, N. Y.:

"Your letter of the 18th at hand and contents noted. I will give you my experience in trying to breed the sex desired. My experience in breeding has been since a boy thirteen years old, and I assure you I am no kid now, as I have been on Village Farm now going on twenty years, and I commenced in the breeding line

with chickens, dogs, pigs, thoroughbred Durham cattle, South Down and Lester sheep, and have finally wound up with the horse business. I have spent a great deal of time experimenting to try to produce the sex that I wished to breed. My experience has been that it is impossible to breed the sex you want. I think that the nearest that people can come to it is to breed the female in low condition and the male in high condition to produce females. I have noticed that the most produce was female, but not always. I am now watching very anxiously the produce of Mambrino King this season. He is twenty-seven years old this spring; that would mean that he was twenty-six last season. I noticed that he was not as vigorous and anxious to serve mares as heretofore. We have a list of all the foals he has ever sired and after this season I will compare it. The great trouble about trying to produce sex is the man that has had a great experience. He is very anxious to have his male in the finest condition possible to get him in, especially at breeding time. He is also anxious to have the female in as perfect condition as possible. I have noticed that the best results were obtained when both sides were in perfect condition to produce a strong, vigorous animal, and I believe this is the only true way to breed. If I were wealthy enough I should never breed or care to produce a 2:10 or better trotter or pacer only every other year, so that I would be positive that I would have the female in the best condition. It is very easy to keep the male in the pink of condition if he is healthy. The female carrying her foal and sucking the one by her side is a great strain on her. I am very sorry that my time is too limited to go into the details of this breeding business as this is a very busy time on stock farms, for both owners and superintendents.

"Would be pleased to have you make Village Farm a visit if you ever come to this part of the country, and would be pleased to meet you and would take special pains to show you any or all of the stock."

Dr. G. N. Christie writes from Long Prairie, Minn.:

"Yours of the 20th duly received. Do not know what the Thury theory is, but I do believe that the time when conception occurs is the great factor in the problem. That fecundation of the old ovule produces males, and that of the new ovule if at the time of the menstrual period, produces females. I have never taken much stock in Schenck's claims, but have never made any experiments or observations looking toward proving or disproving them."

From John E. Thayer, Maplehurst Farm, Lancaster, Mass.:

"I have given this interesting subject a good deal of thought, having bred dogs for sixteen

years. I have had on an average sixty dogs in my kennels a year, during this period, confining my breeding to two breeds—Scotch Deerhounds and Fox Terriers. The theory about breeding a bitch late in her heat would produce males, I have given a thorough trial. My kennelman, who was very much interested in my experiment, followed my orders to the letter. From my experience I think there is nothing in it. Below is a table of the sexes of puppies raised from 1887-1892:

	Males.	Females.	
1887 . . . . .	55	46	101
1888 . . . . .	78	57	135
1889 . . . . .	88	70	150
1890 . . . . .	54	52	106
1891 . . . . .	48	60	108
1892 . . . . .	55	78	133
	378	363	

"In 1890 I changed my stud dog and you will see by the table that the bitch puppies increased. My idea is this, that some sires get a very large percentage of males, while others get females, and that it is the influence of the sire that produces this result.

"I have bred horses for the last nine years and have had five different stallions and have observed that some would get a large percentage of colts, while the others would sire fillies. This is true with the stallion I now own, 'Baron Wilkes,' nearly three-quarters of the produce he has sired, since I have owned him, have been fillies."

From Dr. C. A. Stewart, of Duluth:

"Replying to your letter asking the result of my observations upon the influences which determine the sex of offspring, I will pronounce myself a believer in the Thury theory to a moderate extent, though there seem to be modifications exerted by other influences such as the relative ages and conditions of physical vigor on the part of the parents, etc.

"The faddists here are too busy discriminating the absurdities of Christian (?) Science (?) to enable any observer to test Schenck's theory satisfactorily."

Dr. Mary Whetstone, of Minneapolis, writes:

"Yours of March 24th received. In reply to your questions I regret that I am not able to give more data on the subject of 'control of sex in desired offspring.' For the benefit of one of my patients I have been collecting some information, of which I will report and may add some later.

"1. Mrs. J. became pregnant before menses from one intercourse, offspring, girl.

"2. Mrs. Mc., same experience, except that the menses appeared as usual.

"3. Mrs. W. one intercourse before menses (one day only), offspring, girl. The only girl. Previously had four boys, after which her physician advised no more children until impaired health was restored; was instructed to practice continence until ten days after menses had ceased. But know no danger from just before and pregnancy ensued, so took no care.

"Thus my experience has led me to think that fecundation of ovum just before menses produces females.

"I know of no other influence to control sex, except that Dr. F. J. W. Packman, of Minnborne, Eng., states that in the human female, conceptions in the first half of the time between menstrual periods produces females and male in the latter.

"I have made no observations under Schenck's theory."

From Dr. A. M. Adsit, of Hastings, Minn.:

"It has been my experience that early fecundation produces females, late, males. I believe that nine women out of ten who passes the 28th day from the commencement of menstruation, will give birth to males."

Edward S. Payson, of Grassland Farm, Lexington, Mass., writes:

"Your request for data on the determination of sex in animals is received.

"I wish that I could send you something positive—not guess work. During twenty years of breeding I have read much on the subject and have tried all sorts of theories. Nothing has convinced me that there is any known law. I have, it is true, produced the presumed result and again it has failed. I have noticed that where I have worked my stallions regularly—kept them in strong, vigorous condition, the year's colts have been larger in percentage males. But the developed condition, age percentage, may have had something to do with it. If we try one theory and it happens to work, we can think out other causes just as reasonable to counteract it. I have bred mares so late in their season and so far past it they refused, and have produced both sexes. I have tried breeding on the ninth day after foaling—my usual course with regular brood mares, and it has produced both male and female. I have begun to doubt the stallion having anything to do with the formation of the sex. Is it not in the ovum of the mare, and does it not depend on the sex of the egg in the womb at the moment of the sexual contact? Does one or more eggs pass into the womb at the period of menstruation? If more than one how do we know the sex and how can we tell which one will be impregnated? In cases of twins I have had three such cases, one, both were females; in the others, both offspring were male and female. I have at last given it up. I have one mare that has produced regularly for

some years, alternate male and female. Another that has produced but one female out of ten colts, and yet another that has produced females all save one for the last six years. These mares have been regular breeders and have been bred on the ninth day after foaling. I had one mare that I ordered bred as soon as she came in season. She was bred once. After breeding her I decided I did not quite like her colts and I gave orders to fit her for sale and not to breed her again. She came in season every three weeks regularly. We felt once she was not in foal, and yet I soon saw indications of it, and was doubted. In less than a week after her last season in eleven months she produced the best male colt she ever had. With all this uncertain action of nature, how can I feel other than that I, at least, do not know. I even had one mare carry a lusty, strong colt twelve months and sixteen days, and she was bred but once.

"You see, my dear sir, I cannot aid you. I wish we could know, and am willing to try any new theory. I would suggest your writing to Messrs. Powell Bros., Shadeland, Pa. They are very large breeders in every way and have given the subject great thought and care, and in no haphazard way. See what their conclusions are.

"I have noticed that males are generally carried beyond the foaling time. Females are apt to be born somewhat in advance."

From H. F. Pierce, of the Mariposa Stock Farm, Pawtucket, R. I.:

"Yours to hand. I never tried to control the sex, but have always bred in the last of heat. I have got mostly fillies so far. So far this year we have had four foals and they are all fillies."

Daniel Mahaney, of Portsmouth, writes:

"I observe that mares bred late in their season of heat will produce males, while those just coming in heat get females. When the mares are in good condition as to flesh, the colts when delivered are larger and stronger as a rule."

From Dr. Eliza H. Root, of Chicago:

"I believe in the unvarying methods employed by nature. I also believe in the variations in the unvarying methods. For without them there had been no means of classification, as now into orders, sub-orders, etc.

"A fish scale is a fish scale; the unvarying methods, or perhaps laws were better, in building the fish scale determines its identity as such, while the variations in the methods of building determine to what particular fish or class of fishes the scale belongs.

"There is no way of knowing how or where embryonic cell development determines that one bird should have ten primary wing feathers and another nine. But we do know that the primary wing feathers of birds in number, length, color and markings even are sufficiently constant to

determine the order, genus and species to which the bird may belong.

"The laws governing the building of a fish scale or a bird's wing are fixed laws, but, to my mind are no more fixed than those that determine sex. The spawn of the fish and the broods of the birds will be composed of males and females, true to their respective types. I do not believe that we, as yet, know anything about nature's mode of determining sex. Thury's theory of a ripe ovule for males and the unripe or less ripe for females seems to be surrounded with too many difficulties for perfect observation, barring all later observations made upon the development of the ovule. Schenck's theory appears to have a more scientific excuse for its promulgation. Still, Dr. Schenck has much to do before his theory becomes an established scientific truth.

"If it is true that the female must be sexually superior to the male in order to beget males, why is it not true that if the male is made sexually superior to the female, females will result? It seems but reasonable to infer that if one is true the other must be.

"If the cross heredity of sex is true these propositions must both be true. Dr. Schenck has not proven this; he declares himself helpless in the matter of begetting female children, and to my mind he has not fully proven his theory of determining the male sex."

Dr. Parks Ritchie, of St. Paul:

"The only practical observation I can offer is the fairly constant rule that dating from the beginning of last menstruation boys are carried a little longer than girls. This would argue that the old ovule produces a male and the more recent ovule a female."

Dr. A. T. Conley, of Cannon Falls, writes that a friend of his, a farmer, describes the following experience:

"Three years ago I wanted all heifer calves. I had fifteen cows, so after they had dropped their calves in the spring I was careful that they should take the bull at the second heat (for my theory is that odd heats are males and even heats females), they all got with calf but one, and she took the bull at the third heat, this last cow had a bull calf, the other fourteen all had heifers. I have tried it in at least twenty cases since and with but one single failure, and there was the benefit of a doubt in that case, as the bull may have been with her unbeknown to me, though I have been very careful, but trusted this time to a hired man. I have tried it five or six times with my mares with not a single failure, and once in my family with the same good result. Of course I can't tell anything about it until I have something to count from, so I have to begin after a calf, colt or child has been born. I believe in the odd and even theory without a doubt."

A medical man writes from the southern part of the state:

"Regarding the theories of Schenck and Thury, I will not try to discuss, but tell you some of my own observations.

"I have five children to myself and wife during our wedlock. The first was a son and I cannot tell anything about how long after menstruation conception took place. This child died at sixteen months of age.

"Immediately after menstruation came on and we made up our minds to have another child, and she expressed a desire for a girl baby. We were governed accordingly and as soon as the flow had ceased we took measures to accomplish our desires. I was gone a month from home and when I returned morning sickness was plainly manifest, and in due time reckoning from the day she was delivered of a female child.

"Our next were we thought as we desired, either male or female.

"I was led to this from a theory of my father who always put the female with the male at the beginning of the heat if he wanted a female and later if he wanted a male. For twelve years I have kept one or two Jersey cows. Heifer calves I could sell at a better advantage than I could bulls. So I have sent my cows just as early in the heat as I could, and in all of that time I have only had two male calves. Each cow has had a calf each year and when they have failed to bring females it was when too long time had been allowed to pass before service.

"From this and the experience of my father at home on the farm, I am inclined to think there is something in the idea of being able to control the sex in the desired offspring."

From Dr. W. H. Pratt, of Stillwater:

"The subject is one that has interested me very much for the last thirty years. It is useless and not at all in conformity with the workings of the Supreme Ruler of the universe, to suppose that the determination of the sex is left to chance.

"That there is some fixed law governing it is as certain as day and night. The thing that I have studied very closely is that it depends entirely upon the female organism; and after studying very closely I am quite well satisfied that every alternate flow produces the opposite sex. Of course there are imperfections in nature, although not in nature's law, and it is probable that no theory will be found to be absolutely exact. I have had an opportunity to watch this in many cases in over thirty years of practice, where I was quite certain in regard to the flow, and the theory has very seldom failed. It is next to impossible to test the theory in the animal kingdom with any degree of satisfaction. Have been intending to try it this spring with them if I get a chance."

From Dr. Edward A. Ayers, of New York City:

"I wrote a review of Schenk's book which appeared in my journal, 'Obstetrics,' for March, a copy of which I send you herewith. I do not think it possible for us to accept either Thury's or Schenk's theories as proven. It would require a vastly greater series of cases than they have deduced to demonstrate that they are right in their views. I think one of the most valuable results of Schenk's article will be to stimulate general investigation on sugar in its relations to gestation.

"I feel that there is a most important line of physiologic and pathologic data, hidden as yet, in the sugar question. Schenk is a careful and serious investigator, as a student of his who lately studied obstetrics in my class informed me, but his statements are far from proven."

From Dr. Cappellen, of Brandon, Minn.:

"I received your letter of March 20th, in regard to the 'determination of sex.' I am sorry to say that I am not a believer in any of these theories. I have read many articles on the subject, but always considered it as one of the secret laws of nature which we are not able to explain.

"Dr. Schenk's theory has been heralded widely, but he did it more to advertise himself than anything else. The fact that his theory sometimes fails proves that there exist other factors than nutrition. Dr. Schenk's theory is really ingenious; but, you know that in medicine any theory will find scientific men to uphold it, while others will call it a fake.

"If you believe that fecundation of an old ovule produces male and of a young one female, how will you explain the following fact: I read once in a medical paper that in the Jewish church there is an article of faith that says that no man shall have any intercourse with his wife from the first day of her menstruation until fifteen days after the flow has begun. If this is the case with the Jews (and you can easily ascertain it), the only chance of fecundation of the ovule would be in its meeting a spermatozoon put there previous to the menstrual period and the spermatozoon should have reached by that time the upper end of the Fallopian tube and the offspring should be a female. Still there are many boys among the Jews.

"It is an admitted fact that any theory in the animal kingdom proves to be true when applied to the vegetable kingdom. Can any one explain in a hermaphrodite plant what blossom will be male and which one female? If you have a hen that wants to set can you pick eggs that will give roosters or hens?

"My grandmother used to say that pointed eggs were roosters and round ones hens; but, I must say, I never tried to verify if her theory was right or wrong. But, if my grandmother's

theory in regard to chickens is right, we are allowed to conclude that we find two kinds of ovules; some round ones and some pointed ones. The fecundation of the first will give a girl and of the latter a boy.

"Until irrefutable proofs to the contrary I will believe that the determination of sex is a pure and simple utopy."

### THE ADVANCE OF MEDICAL EDUCATION IN THE UNITED STATES.\*

By FRANKLIN STAPLES, M. D.,

Winona, Minn.

The subject of advance in medical education in this country has never failed to receive a share of attention, but of late years more general interest and favoring conditions have aided in securing better results in this direction than could formerly be realized. It is intended here to notice briefly a few of the more important facts pertaining to the progress which has been witnessed, together with some of the conditions and causes which are seen to have favored the same. Some knowledge of the history of events is necessary to an understanding of what has transpired in recent times. It is evident that any account of the present and past of this department of education in the United States can be presented in a single paper only in part—as a history in brief outline.

Beginning and Progress.—Medical instruction began in the British colonies of North America a little more than a century and a quarter ago, when Dr. John Morgan and Dr. William Shippen, Jr., began the foundation of what has come to be the present medical department of the University of Pennsylvania.

It has been claimed that the progress of medicine in all countries, from the earliest times, has kept pace with that of other sciences; but many observers, as well in this country as in others, in applying the rule to the department of medical education, have declared that to this an exception must be made, and this to the discredit of the educational institutions of this country; and various reasons have been assigned for the same. It is seen, moreover, that late developments in the science of medicine and surgery are not only most valuable at the present time, but have abundant promise for a greater future. An estimate of the value of what the present affords is best made in connection with a view of the past.

As Formerly Seen Abroad and at Home.—Professor Puschmann, of Vienna, in his "History of Medical Education," published a few years ago, gives the view as it appeared from the

\*Read before the Section of Medical Education, Jurisprudence and State Medicine of the Minnesota State Medical Society, June 21, 1899.

standpoint of a German university. He observes that the system of medical instruction prevalent in England has been imitated wherever the English language and English culture prevail; and says, "In the United States of America medical teaching is also a matter of private enterprise. Several doctors living in the same locality unite for the purpose of imparting instruction in medicine, and give their pupils testimonials of proficiency. No one makes inquiries as to the qualification of the teachers, or as to the result of their teaching. These schools consequently differ exceedingly in merit. According to a list made in the year 1882, there were in the United States at that time 114 medical schools and 13,321 students." Following this he says: "Some medical schools enjoy, and justly so, a high reputation." Of these he mentions five, in three large cities of the country, and adds the following: "Along with these, however, there are others which occupy a low position, both intellectually and morally. The scandalous traffic carried on by many faculties in doctors' diplomas is well known." (It is to be hoped that the professor did not intentionally classify the secret diploma shops, existing in this country at the time, as among our schools of medicine.)

Again, to substantiate the truth of his statement, that the education of American doctors is, as a general rule, inferior to that of their European colleagues, he quotes the words of President Eliot, of Harvard University, said in 1871, as follows: "It is fearful," says President Eliot, "to think of the ignorance and incompetence of most American doctors who have graduated at American schools." This is enough of the German professor's quotation from the American university president's report made in 1872 to give the view of the quality of medical education in this country at that time, at least as held by these authorities. Again, by way of accounting for the existence of a certain number of better educated doctors in this country, he says: "The skilled doctors found in America are in many cases of European origin, or at least have studied in Europe." And finally, as belonging to the credit side of this account, and as a crumb of hope for the future, he says: "Yet some departments of medical science, such as gynecology and dentistry, have been prosecuted with great success in the medical schools of North America. Moreover, a gratifying endeavor is now everywhere being made to do away with the existing disabilities, and to introduce improvements into the system of medical education, following European models."

In reviewing these estimates and conclusions, made a few years ago in a European university, two questions naturally arise: First, was this account of the general condition of the medical profession and of medical education in this coun-

try, mainly correct at the time it was made? and, secondly, if this question must be answered partly or wholly in the affirmative, have any changes occurred since that time which render the estimate then made less true or entirely untrue at the present time? For facts and opinions to aid in answering these questions, we may look to good authority in our own country.

It is true that for many years the desire of educators in the higher schools of this country has been to advance the standard of medical education, and to this end to lengthen the time of study required for a degree; but for a long time what seemed to be insurmountable obstacles were able to effectually block the way of progress in this direction. The mention of this fact brings forcibly to mind the words of the late Professor William Pepper, of the University of Pennsylvania, spoken several years ago to the students of that institution. His language was as follows: "Few persons at all familiar with the subject will be willing to express even the smallest satisfaction with the present state of the medical profession in this country." Continuing, he gave the status of the profession as follows: "The ranks of the medical profession are over-stocked; only a small percentage of those engaged in its practice are able to earn a living thereby, and worst of all, the profession has failed to elevate its standing and repute with the public, or to exert the powerful influence upon sanitary legislation, upon public and private hygiene, upon education and upon similar subjects, which is at once its duty and highest prerogative." This was said by eminent American authority in the year 1887.

It may be thought that what is here quoted from the words of the German professor, the university president and the distinguished professor are estimates not unlikely somewhat below what in full justice should be made; yet the German must be allowed his right of opinion, and it does not appear that either of the learned Americans was ever made a defendant in a suit for libel brought by the whole American profession.

Need of Clinical Instruction and of Original Research.—Surgeon John S. Billings, in his lectures "The History of Medicine, Medical Legislation, and Medical Education," at the Johns Hopkins University in 1877, on the question as to what is requisite for the advancement of medical education in this country, has the following: "Given a student with a fair preliminary education, such as is required in the continental schools, what is his great and urgent need? From all sides comes the answer, 'clinical instruction.'—the study of disease on the living subject." The great importance of this instruction in the college course is further emphasized by this dis-

tinguished teacher. He says: "An absolute necessity to make the school effective in training practitioners, is an abundance of clinical material—large dispensaries and hospitals, in which men, women, and children, affected with all sorts of diseases and injuries, are brought together." The same authority observes: "The second existing demand is the promotion of original research and discovery in medicine, including the making known of the discoveries." And, representing what he regarded as the condition of things at the time, he said: "In this field we do not find any organized effort being made in this country. In no university or college, hospital or asylum, do we find going on systematic and scientific investigations in physiology, pathology, or therapeutics, such as are being made in Germany; and less generally and systematically, yet still to a great extent and with good results in France and Great Britain."

Dr. Billings also quotes President Eliot, and the English philosopher and historian, Lecky, as substantiating his views. The former said: "Who of us but has felt at some hour of his life, that he would give all that he possessed, if only the range of medical knowledge could be even but a little enlarged; if it were known how this fatal membrane could be dissolved away, how this hemorrhage could be arrested, how this clot in the brain could be absorbed." The words of the latter are given as follows: "Of all the great branches of human knowledge, medicine is that in which the accomplished results are most obviously imperfect and provisional, in which the field of unrealized possibilities is most extensive, and from which, if the human mind were directed to it, as it has been during the past century to industrial inventions, and especially to overcoming space, the most splendid results might be expected." The views of these distinguished laymen and educators, here given, to some minds may seem to be somewhat extreme and not altogether a complete account; but all must acknowledge what is said to be largely correct as applied to what appeared at the time when the observations were made. The object of this writing is to show that the standard of medical education in this country has been greatly advanced in the past few years, and to suggest briefly what may be regarded as the principal causes of the progress which has been made.

What for a long time effectually prevented any considerable advancement of the standard of medical education, together with what important changes should constitute the effectual means of overcoming opposing forces, have been understood by progressive educators, and efforts for improvement and reform have not been altogether wanting. A bit of history appears in a second address of the late eminent Provost of the University of Pennsylvania, in 1892. Re-

ferring to the record of the anniversary of the college sixteen years before, and the reflections then made on the degeneracy of medical education, he gave the history in words as follows: "We thought of the bitter experience of 1846, when in accordance with the earnest recommendation of the American Medical Association, the University of Pennsylvania bravely extended her term of study, only to find that, in spite of their specious assurances, not a single one of her rivals emulated her courage; so that, after six discouraging years of steadily diminishing classes, she sorrowfully abandoned her advanced position. We thought, too, also, of the long and painful controversy, lasting almost five years, over the proposition to again elevate our standard of medical education, and of how the end had been attained only at the cost of old friendships and of the allegiance of valued associates whose convictions remained unchanged as to the injury that would be worked to the University by the proposed advance." This was said by the learned professor with reference to experience in the past, but with a hopeful view of what was then begun, which promised much for the future. General and professional public opinion has been slow in coming to its present understanding and position. It is necessary to refer again to the words of President Eliot concerning certain causes of the slow progress in the advance of medical education, which afford suggestions for their removal. The diagnosis of the case, a little of the pathology, and indications for treatment were given in an address by him, I think, in 1892, and published in the *British Medical Journal*. In this and what follows may be found an answer to the second question above mentioned, viz.: What, if any, changes have occurred in very recent years, which render the low estimate of the character of medical education in this country less true or entirely untrue at the present time? The points were made as follows: First, that it is a clear disadvantage in medical education, that the degrees given by a teaching faculty should admit to membership in the profession, and so to the legal right to practice medicine; and second, that the standard for membership, giving right to practice, should be made by law outside the teaching powers. With the view in mind, thus given by the Harvard president less than ten years ago, we may now take a look at the present.

First, concerning state legislation and the results thereof. Beginning in the state of Illinois, in 1880, medical practice laws have been enacted in nearly every state in the Union, many of which require the candidate for practice to pass the state examination; and for admission to this examination the laws require evidence of graduation from a college which requires for a degree a course of four years, with at least six

months' attendance in each year. The passage of laws with these or similar provisions by a large proportion of the states, has had the effect to raise the standard in all schools of medical instruction. Moreover, the advancement shown in the enactment of state medical practice laws to such an extent through the country, is suggestive, in that it speaks of an advance in public opinion and knowledge of science in medicine.

Various authorities in the past have agreed in the opinion that the changes required for improvement in the system of medical education in our American institutions have been principally as follows: First, such as would make the professors in our college not dependent upon the size of their classes for the amount of their salaries. In other words, that, as in the principal European universities, the support of the teaching faculty should be provided for otherwise than to be made dependent upon the fees of students. The tendency of this would be to elevate the standard of the schools, by doing away with the kind of competition that seeks for admission of students regardless of their educational qualifications.

Secondly, it has been made to appear that it would be for the general advantage, if the number of medical schools and of students should in some way be diminished—made less in proportion to the population of the country. The suggestion is that this change might be effected by increasing the requirements not only for graduation but for admission to the medical schools. Furthermore, it has been claimed that if in some way the number of medical schools could be limited to such as should exist as medical departments of universities, this would tend to make improvement possible.

Clinical instruction, as a part of the college course, has of late years greatly increased in importance; but many of the smaller medical schools are located where sufficient clinical material is not available. A recent writer in the *Journal of the American Medical Association* (Feb. 4, 1899), deplors the fact that so much clinical material is afforded in the persons of such as are able to pay for medical service, and who ought not to be allowed free service at hospital or college clinics; and asks concerning the medical profession, "Is it going into voluntary bankruptcy?" While it is well to endeavor to correct, so far as practicable, the evil here noticed, would not a greater advantage be gained by advancing the requirements for admission to the ranks of medical practitioners, and thereby cause the profession to be less over-stocked and the average of quality increased? It is believed that the teaching faculty of the country will not generally agree with the writer of the article to which reference is here made, in his views concerning

the value, or rather want of value, of clinical instruction to students of medicine.

Present Conditions and Causes.—Notwithstanding the fact that efforts to elevate the standard of medical education in this country in former times were for the most part unavailing; yet, in more recent times conditions seem to have changed, and we are now able to observe in the retrospect certain causes which apparently have conspired to render our present better possessions possible and actual.

Two important developments belonging to this period may be noticed in this connection: First, the advent and growth of state medicine, together with what has come to pass in state requirements for medical practice in the states; and, second, the extension of the college course made necessary by new discoveries in science, the study of which was found to demand much time and attention. Other causes of advance are known, but these with what have been connected with them, are seen as the most important.

The effect of medical practice laws enacted by many states and improved from time to time, especially during the last two decades, has been to elevate the standard of education by extending the length of study time; both the number of years in all, and the length of the college course in each year. Moreover, the quality and extent of instruction have been determined by laws which not only require state examinations of candidates for practice, but determine the terms of admission to such examinations; requiring graduation from a college which complies with the state requirements as indicated above. It may be claimed that in all of this there are chances for faulty management and execution of the law on the part of state examining boards; but be this as it may, the advance of the standard of medical education already made in this country, in the promotion of which state legislation has had its important part, is known to the world, and is appreciated. Besides, the movements made to accomplish this advance are seen to have had an educational influence.

The second principal cause of the late advance of medical instruction appears in the advent of new departments of science in pathology and therapeutics. Of these what belongs to the science of bacteriology may have first place. The pathological laboratory, enlarged because of the new fields of investigation opened by the coming of this science with its dependencies, has a larger place than before in all advanced schools. The effect on the schools has been to extend the course, widen the scope, and elevate the standard of instruction. The increased demand for clinical study in the college course has also had its part in extending the time and improving



the quality of medical instruction. Thus it is seen that what was vainly attempted by educators in former times in the later development of law and order, and in the general advance of human knowledge, has come into existence in a natural way, as suitable conditions for its development have been furnished.

#### SOME THINGS SAID AND WRITTEN.

Besides what has appeared on medical education in the United States in the larger historical works, and in medical journal literature, the following monographs by distinguished physicians of this country have appeared, to some of which reference has here been made.

"The Progress and Spirit of Medical Science. An Anniversary Address before the New York Academy of Medicine;" by E. R. Peaslee, A. M., M. D., New York, 1859.

"Contributions to the Annals of Medical Progress and Medical Education in the United States before and during the War of Independence;" by Joseph M. Toner, M. D., Washington, 1874.

"Contributions to the History of Medical Education and Medical Instruction in the United States of America. 1776-1876. Prepared for the United States Bureau of Education;" by N. S. Davis, A. M., M. D., Washington, 1877.

"Medical Education—Extracts from Lectures Delivered before the Johns Hopkins University, Baltimore, 1877-8;" by John S. Billings, M. D., Baltimore, 1876.

"Medical Education and the Regulation of the Practice of Medicine in the United States and Canada;" Illinois State Board of Health, 1883.

"Addresses and Exercises at the One Hundredth Anniversary of the Foundation of the Medical School of Harvard University, Oct. 17, 1883;" Cambridge, 1884.

"Higher Medical Education, the True Interest of the Public and of the Profession. Addresses before the Medical Department of the University of Pennsylvania, Oct. 1, 1877, and Oct. 2, 1893;" by William Pepper, M. D., LL. D., Philadelphia, 1894.

"A Plea for Efficient Legislation Regulating Medical Practice;" by Perry H. Millard, M. D., St. Paul, reprinted from the Bulletin of the American Academy of Medicine, Vol. 2, No. 1.

"Medical Education and Registration. United States and Canada;" by William T. Slayton, M. D., Hyde Park, Vt., 1897. This little book treats concisely of the laws controlling medical practice in each state of the Union, and gives statistics of medical institutions, students and physicians, at the time of its publication.

#### DIET IN TYPHOID FEVER.\*

By E. J. ABBOTT, M. D.,

Professor of Clinical Medicine in the University of Minnesota  
St. Paul.

Because of the frequency with which hard, undigested curds are found in the intestinal tract in autopsies upon patients dying of typhoid fever, the idea has occurred to me that perhaps we make a mistake in confining a typhoid patient too rigidly to a milk diet. I have found in closely observing these cases, both in hospital and consultation practice, that the diagnosis of typhoid is practically synonymous with the ordering of a milk diet every two hours; with more or less whiskey or brandy at about the same or perhaps longer intervals. This routine practice seems so universal that I have taken occasion to look up authorities, and find that the large majority of them are agreed on this point.

\* There was a time when it was thought that people with fever must be starved. A revolution occurred under the teachings of a celebrated Dublin physician, that was so great that the epitaph carved upon his tombstone was, "He fed fevers," and there is no question but that the improved feeding of people suffering with continued fevers is due very largely to his teaching.

We have been taught, and are accustomed to teach, that because of the ulceration in the intestinal tract, a diet should be given which is to as great an extent as possible devoid of any residue that might produce irritation, i. e., food which is capable of thorough and complete digestion before it reaches the lower portion of the small intestine so that there will be nothing left that may act as an irritant to the ulcerated surfaces.

Two questions now arise: firstly, is milk the ideal food to meet these conditions? and secondly, should it be given at such frequent intervals, i. e., every two hours, as is commonly ordered?

If milk in a proper condition, at the proper temperature, is sipped slowly, especially if diluted with lime water, barley water, seltzer water or something of the sort, it will form a soft curd that is not too firm and is capable of easy digestion; otherwise, and as ordinarily given, it is liable to form a hard, firm, indigestible curd, that, while it may be somewhat subdivided in its passage through the alimentary canal, yet almost invariably leaves some hard curds, which, if our theory of the feeding in this disease is correct, are capable of doing serious damage. Even a small portion of beefsteak or a chop, if well masticated, would be so acted upon by the digestive juices before reaching the ileum that it would be less irritating, less likely to cause trouble, than would this milk curd. We do not, how-

\*Read before the Section of Medicine of the Minnesota State Medical Society, June 21, 1899.

ever, advocate the use of meat in typhoid, principally because the patients are to a great extent in such a condition of stupor that proper mastication would be out of the question. Aside from this, the lack of appetite is such that patients in this condition would not take food enough to do them much good if they were obliged to chew it, so we leave out of the question foods that require masticating to any great extent.

A great many people do not like milk, a great many people in health cannot digest it satisfactorily, and the result of a milk diet with them is what for lack of a better name is perhaps best described by the broad term in such frequent use by the laity, "bilious"; a term which means anything or nothing, which is used by one to describe a diarrhoea, by another constipation, by another nausea, by another headache. The tendency, however, to the production of this condition can be largely avoided by dilution with various waters, especially the use of aerated waters, as Apolaris or seltzer, etc.

It has been my practice for years to allow my typhoid patients what we may call soft diet instead of milk diet, viz., a diet consisting of a milk, if it is agreeable, buttermilk, all kinds of soups and broths, eggs raw or soft, or the yolk if they like of hard boiled eggs. By hard boiled I do not mean an egg that is boiled four or five minutes, just sufficient to coagulate the albumen, but an egg that is cooked from one-half to three-quarters of an hour. The yolk of an egg in this condition is easily digested and is nutritious. I also permit custards, rice, farina, junket, tea, coffee, chocolate, cocoa, ice cream and particularly milk and cream toast, and all foods of that class. I have never yet had cause to regret feeding my patients in this way, and am convinced that this diet leaves less waste and indigestible material as a possible irritant to the ulcerated surface than does an exclusive milk diet.

We are advised by nearly all writers to carefully avoid the use of fruits, as they tend greatly to increase the diarrhoea, and this same objection is also urged to the use of soups and broths. In certain portions of the country there is a great tendency to diarrhoeal complications in typhoid, and when diarrhoea is a marked feature in a given case, this advice holds good, to the same extent as it would in diarrhoea occurring in the course of any other disease; but the cases of typhoid fever that we see in this part of the world are not, as a rule, accompanied by diarrhoea to any great extent, indeed more commonly by constipation, therefore this objection has not the force in typhoid as we see it here. We find a majority of our cases of typhoid require the use of laxatives or enemata in order to relieve the existing constipation. Under these circumstances I find from observation and experience the use of a moderate amount of fruit of the

proper variety harmless. I would not advise the use of strawberries, blueberries, raspberries, fruit having seeds that are almost entirely indigestible; but stewed or baked apples, the pulp of grapes, from which the skin and seeds have been removed, the juice of oranges and even bananas I do permit. Speaking of bananas, I would call attention to the fact that the ordinary black, rough skinned, half rotten banana, that has been picked in a state of absolute greenness and has been rotted, not ripened, by the aid of a lamp in a dark, stuffy cellar is not fit even for a well person to eat; but the banana that is smooth, with a shiny yellow coat, where the fruit within is firm and juicy, is certainly healthy for ordinary people.

We are told that foods such as have been mentioned should be used, and then only sparingly, after the temperature has remained normal for at least a week. Patients during this time have been clamoring for food, have been developing an appetite, and when the embargo is removed eat to excess and very often an attack of indigestion results. I have found my patients who have been fed on such a diet as I have outlined are stronger and in better condition after the run of the fever than others who have been restricted to an absolute milk diet. Not only this, but the universal testimony both of the patient and of the nurse is that the patients were not only happier and more contented, but better nourished than those where the old regime was carried out.

To take up the second part of this question, the intervals between feedings: Years ago it was the habit of women to feed the baby when it cried. The more the baby cried the oftener it was fed, and the oftener it was fed the more it cried. This method of feeding babies had gone on for ages until infant colic was supposed to be as much a part of a baby's life as snow is of winter or as heat is of summer. When some attention began to be paid to infantile digestion and its troubles, the fact was recognized that the colic and the vomitings were largely due not only to over-feeding, but more especially to too frequent feeding; that the stomach like all the rest of the body required a certain amount of rest; that it was not a good idea to fill the little stomach with milk and immediately after the surplus had been emptied out by vomiting to fill it up again, and before this had been digested, to put in some more, so that the stomach never had a moment of rest. Gradually the intervals between the times of infant feeding have been lengthened to two or three or four hours with the beneficial results which all of us have observed time and time again. With the longer interval in feeding, thus enabling the stomach to rest and be again in condition to do its work, the vomiting stopped, the colic stopped, the diarrhoea stopped and the baby was healthier and happier.

Why should we not apply the knowledge we have gained by experience with babies to our treatment of older patients? Any of you can make an experiment either on yourself or on some victim who is in robust health, and feed a tumblerful of milk every two hours and see what effect will be produced upon the digestive apparatus. I am willing to wager that in less than the time which is required by the ordinary case of typhoid fever to spend itself your digestion will be impaired, your appetite will be destroyed, your tongue will be coated, your mouth will taste badly, and you will gladly go back to your three meals a day; and yet your patient lying in bed suffering from typhoid fever, with the digestion already impaired by the fever, has his glass of milk presented to him and is compelled to drink it at these frequent intervals. Is it any wonder that he becomes tired of it, that he has indigestion after it and avoids it if possible? Whether he succeeds or not in swallowing the milk, the glass is too often left in the germ-laden room until its use is again required.

Lengthen out the intervals of feeding from two to three or four hours, perhaps even longer, and you will find that your patient will do better, that he will relish his food more than he did, that he will digest it better and will recover from the fever stronger and in better condition than he would otherwise.

Alcohol is classed by some as a food, by others as a drug. Its proper position is probably midway between the two, and it comes so near to the food line that we may properly consider its use here. The place that alcohol has in the treatment of disease has been frequently argued and discussed. There is a wide difference between the bigoted, fanatical prohibitionist on one hand, and the physician on the other hand who uses alcohol in all diseases and for all purposes. I am not a prohibitionist, I am not a teetotaler, but I am firmly convinced that there is no one drug the use of which is so greatly abused in our profession as alcohol. The same personal experience spoken of in regard to milk might be applied to whiskey, and I am fully convinced that should any one on a diet such as our fever patients have, or even on no particular diet at all, be fed one to two tablespoonfuls of whiskey every two to four hours regularly, after a month he would find himself the worse rather than the better for it, leaving entirely out of consideration the possibility that patients compelled to drink this quantity of liquor for that length of time might form a habit detrimental to them afterwards. I am forced to the conclusion that this use of alcoholics in the treatment of fevers is not only unnecessary but often injurious to the nerves, and the presence of alcohol will interfere decidedly with digestion. We know also that it is a decided stimulant, not only to the nervous

system, but to the circulatory system as well. Now if we are about to start out on a long drive, shall we begin by plying our horses frequently with the whip, or shall we save the use of that persuader until the latter end of our journey? Which method is best used and will bring horse and driver to the journey's end most satisfactorily? Why not apply the same rule and common sense to our treatment of patients that we would apply to our horses? The time is very apt to come in the course of typhoid, or of any disease, when the use of stimulants is necessary and imperative, and we need to get positive results therefrom, but this is not in the beginning of disease, but like the whip to the horse it should be saved for use when occasion demands, and then given not as a routine method but only as the exigencies of the individual case demand.

I know there are a great many who are careful and judicious in their use of food and stimulants for fever patients, but I have been led to make these remarks because I have seen so many cases where these principles seem to be utterly disregarded, and where the routine practice of milk and whiskey, whiskey and milk, seems to be the routine treatment as to typhoid fever.

There are of course cases where, owing to idiosyncracies and conditions, a patient is only able to take a very small portion of liquid nourishment at a time, and, in order to administer the requisite amount for nutrition, it must be administered at frequent intervals; but this is only in rare cases and only for a short period; ordinarily I believe we shall do far better by giving our food at longer intervals and in forms that give greater variety than has been the custom.

#### BRONCHIAL PNEUMONIA OR CATARRHAL PNEUMONIA.\*

BY EMERY H. BAYLEY, B. L., M. D.,

Lake City, Minn.

Bronchial pneumonia, or catarrhal pneumonia, is an inflammation of the terminal bronchi and the air vesicles, which make up the pulmonary lobules, and affects scattering groups of lobules here and there throughout the lungs. It tends to migrate from one lobule to another; as one lobule clears up, another lobule becomes inflamed.

It is essentially a secondary disease, following attacks of la grippe, bronchitis, whooping cough, measles, scarlet fever and diarrhoea. It occurs in the exhaustion accompanying typhoid fever and nephritis whenever the sensitiveness of the larynx is benumbed so that foreign particles are taken into the air passages.

It is the pneumonia of children under five years of age and of the aged and of those ex-

\*Read before the Wabasha County Medical Society, July 13, 1899.

hausted by disease. We have seen it most frequently in children suffering from la grippe. The little patient, about the third to the fifth day of the disease, catches cold and suffers a relapse and the doctor is called to find a case of lobular pneumonia. The forms of infection most often are the streptococcus and staphylococcus pyogenes, pneumococcus of Frankel and the tubercle bacillus, the latter is usually the later infection, and often ends fatally.

During the catarrhal inflammation of the lining of the smaller bronchi and air vesicles the epithelial cells desquamate and accumulate therein; there may be a diapedis of red corpuscles into the air vesicles, accompanied by a mucus outpouring, and so the cells become filled and the air excluded.

#### RESULTS OF INFLAMMATION.

1st. Resolution. The cell elements undergo fatty degeneration and the mucous secretion is expectorated, or absorbed, and recovery follows.

2nd. Suppuration and gangrene may occur.

3rd. Fibroid change and a chronic condition remains.

#### SYMPTOMS.

The symptoms in children are those of an exaggerated bronchitis. The cough becomes short and hacking; the alæ of the nose dilating with each respiratory effort. Respiration, 40 to 60 a minute, with no expectoration. Dyspœa marked; lips and skin having a blue hue. Child unable to hold nipple for any length of time. Pulse markedly accelerated, 120 to 160 per minute, and the temperature may reach from 103° to 104° Fahrenheit, and is very irregular, now nearly normal, then up and down. Thus it will continue for two to six weeks, and you cannot calculate at one visit what it will be at the next. Complete loss of appetite accompanied by excessive thirst.

By auscultation we hear numerous small, moist râles scattered through the lungs, the position of the râles changing as the disease runs its course. The expansion of the lung is defective, and the up and down type of breathing is noticed. Fine, subcrepitan râles are heard on both inspiration and expiration. Percussion gives areas of dullness in one locality, and tympanic resonance in another. Dullness is often first made out along a strip on either side of the vertebral column.

#### COMPLICATIONS.

Tuberculosis and meningitis are to be dreaded, and when they occur, are usually fatal. Chronic bronchitis and emphysema occur and tend to produce a tedious course.

#### PROGNOSIS.

In children under five years of age the mortality ranges from 30 to 50 per cent, ranking

next to summer diarrhoea in its fatality, being most fatal in children under two years of age. In the new born, due to inhalation of particles from the parturient canal, it is excessively fatal. In the aged, debilitated by previous disease, fatal in 40 per cent. or more. I have seen cases get well that I thought would die, and have seen them die that I thought might get well.

#### DURATION OF DISEASE.

From one to six to twelve weeks; better wait until the special case has run its course before making a prognosis as to the duration of sickness. From the microscopical examination of the sputum as to the kind of bacteria present you can make your most accurate prognosis as to the course that will be pursued. Local hygienic conditions alter to a great degree the duration of the illness.

#### PREVENTION.

In many instances you are not called to see the case until the period of prevention has passed, but when possible the following should be recommended:

1st. The maintenance of an even, moist temperature in the living or sick room, 68 to 73 degrees Fahrenheit, and the vaporizing in the room in a vapor cresoline or similar lamp the following helps to purify the air: Oil eucalyptus,  $\frac{3}{4}$ i; carbolic acid,  $\frac{3}{4}$ i; turpentine,  $\frac{3}{4}$ vii.

2nd. Washing the mouth with hot water or some antiseptic, after taking nourishment.

3rd. The cleansing of the nasal cavity.

4th. The maintaining of general body strength by nutritious diet.

5th. In children by wearing combination suits of underclothing at night, thus preventing the body from being exposed in case the bed clothes are thrown off.

6th. In winter, one from outdoors should not handle children until thoroughly warm.

#### TREATMENT.

1st. Moist, warm air in the room, temperature 68 to 73 degrees Fahrenheit. Good ventilation so there will be an abundant supply of oxygen. An open vessel containing tincture of benzoin in hot water, acts as a pleasant and beneficial inhalant.

2nd. Change of position of patient. Do not let him remain upon his back any great length of time.

3rd. Nutritious diet. Milk, malted milk or egg-nog every four hours. Liquid beef peptonoids, one-half to three teaspoonsfuls every three hours.

4th. The chest should be treated at first by an application of equal parts of tincture of iodine and glycerine, applied frequently enough to keep up an irritation; later camphorated oil. The chest should be enveloped in cotton batting, covered with oiled silk.

5th. To reduce the temperature, give plenty of water and frequently sponge the body with hot water, containing mustard or alcohol. Quinine in moderate doses enables the patient to withstand the fever much better.

You must closely watch the respiration in catarrhal pneumonia; if any signs of dyspnoea develop, an emetic will unload the bronchi, and Prof. Robin, of Paris, claims it will increase pulmonary ventilation nearly two-fold; the amount of oxygen consumed nearly doubles, and the amount of carbonic acid eliminated is more than doubled. The best way to lessen bronchial fermentation is to empty the bronchial tubes. An emetic bears the same relation to bronchial fermentation and infection that a cathartic does to intestinal fermentation and infection. If any course of treatment will cut short the attack and lessen the fever, the emetic treatment will. Let it be repeated daily, or every two or three days, as the respiratory condition demands. Equal parts of syrup of ipecac and syrupus scillæ comp. usually produce results with a comparatively small amount of depression. I think we avoid this treatment when it should be enacted. In children, when first attacked, one minim of tincture of aconite an hour may be beneficial. A tablet which I have found I could readily administer, and which checked the cough, contains nitre, sanguinaria, codeine and tartar emetic. As an expectorant, give plenty of water. The standard expectorant consists of:

Potassii Acetatis ʒij.

Liq. Am. Acetatis ʒiij.

Sp. Ætheris Nitrosi ʒj.

Aq. Camphoræ, q. s. ad ʒiij.

Directions: One teaspoonful every hour for a child, and a tablespoonful every two hours for an adult.

Creosote, or carbonate of guaiaecol, in glycerine should be used if there are any indications of tuberculosis.

If stimulation is demanded, and it often is, use plenty of brandy, aromatic spirits of ammonia, strychnine and perhaps nitroglycerine, especially if dyspnoea is marked. In the aged, infusion of digitalis and citrate of caffeine protect the heart. In chronic cases, an expectorant tablet containing:

Strychnine, 1-60 grain.

Tincture of digitalis, 2 minims.

Terpin hydrate, 3 grains.

Opium, pulv., 1-24 grain.

Ex. hyoscyamus, 1-4 grain.

Sig: One every four to six hours seems in adults to give good results.

In the aged as an expectorant and absorbent:

Am. chloride, 1 drachm.

Am. iodide, 1-2 drachm.

Syrup glycyrrhiza, 4 ounces.

Sig: One tablespoonful four times a day.

When the adult is sleepless and restless, asa-fetida quiets the nervousness without depression, and at the same time acts as an expectorant.

After the fever has left, iodide of potash, ten grains a day in a tonic, say, Wampoles's cod liver oil and hypophosphites, seems to do well.

In children, Maltine and coca wine.

The general strength has to be constantly guarded, and the stomach should, as far as possible, after the acute onset, be relieved from nauseous medication.

The bowels should be kept open, one to two movements a day. In the first stages I use calomel in small doses, and repeat as the case demands. Later, aromatic cascara sagrada night and morning.

In the aged, inhalations of oxygen obtained by adding Oakland oxygen tablets to their hydrogen dioxide, seems to stimulate respiration and prove beneficial.

Keep at work in all cases, in the hope that the disease may subside. I have observed that it is necessary to maintain the patient's strength, letting the fever alone only in so far as sponging will reduce it, and to give as little medication as possible which will in any way weaken the nerve or heart centers. Aim to maintain life, in the hope that it will outwear the disease.

G. M. Edebohls concludes as follows: Chronic appendicitis is present in from 80 to 90 per cent. of women with a symptom-producing movable right kidney. This frequency constitutes chronic appendicitis one of the chief, if not the chief, symptom of movable kidney. Chronic appendicitis, by reason of its frequency, the protracted suffering, and serious impairment of health which it entails, and the dangerous possibilities of implanted acute attacks of appendicitis, may be considered the most important complication of movable right kidney. The writer's statistics show that 20 per cent. of all women have symptom-producing movable kidney or kidneys; that 4 per cent. of all women have appendicitis; that while 3½ per cent. of all women have both symptom-producing movable kidney and appendicitis, only one-half of all women have appendicitis and well anchored kidneys. The startling nature and importance of the conclusion to be drawn from these statistics do not invalidate the latter. Satisfactory investigation of the relations of movable kidney and appendicitis became possible only after the discovery and elaboration of the writer's method of palpation of the vermiform appendix. It remains impossible to those not practically familiar with the method. Chronic appendicitis may be the only symptom of movable right kidney. Some of the symptoms commonly ascribed to movable kidney are often in reality due to the concomitant appendicitis.—Medical Record.

# NORTHWESTERN LANCET.

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## THE STATE MEDICAL SOCIETY MEETINGS.

Under this heading the St. Paul Medical Journal puts in a plea for several changes in the method of conducting the meetings of the State Society; of these changes the most important are the reduction of the number of business sessions to two, namely, on the first and third mornings of the meeting, giving up the forenoon of the second day to scientific work, and the substitution of four sections for the nine now provided for, the four being medicine; surgery; obstetrics and pediatrics; and medical education, jurisprudence and state medicine. The sections of pathology and physiology, nervous diseases, and materia medica and therapeutics, would naturally become incorporated with general medicine, while the section of surgery would include gynecology, and ophthalmology, otology, etc.

The Lancet is quite ready to agree that there is much that is unsatisfactory about the present method of conducting the meeting of the State Medical Society. As was pointed out in an earlier issue the program for the last meeting presented the absurdity of sixty-six papers to be read and discussed in fourteen hours. The inevitable result was that not half of those who had prepared papers got a hearing. An attempt was made to gain time by having the section of ophthalmology, otology, laryngology and rhinology hold a session simultaneously with the section of surgery; the result was highly unsatisfactory, as the members of the Society for the most part preferred to listen to the papers on surgery and the audience for the other section amounted scarcely to a corporal's guard. A knowledge of the past experience of the Society would have

prevented the mistake of trying to have two sections meet at once. This was the plan pursued previous to 1891, when the sessions of the Society were increased in number from two to three so as to give time for the sections to meet singly, because under the previous method of having two sections meeting at the same time it was found that everybody attended the session of the more attractive section. There is nothing to hope for from trying to relieve the congestion of papers by having two sections meet at once. The plan will not work.

The Journal's suggestion that the forenoon of the second day be devoted to scientific work instead of to business is a good one. The business of the Society used to be done in two sessions when the meetings covered but two days and there is no reason why that part of the work should take longer now than it did ten years ago. The suggestion that the forenoon sessions should be called to order at nine instead of at ten is of doubtful merit, at least on the first day when the attendance is usually made up for the most part of the local medical men who find it difficult enough to finish their morning visits by ten o'clock, to say nothing of nine. When the Society met in St. Paul a year ago it was after eleven o'clock on the first day before there were enough members on hand to warrant calling the meeting to order. With two morning sessions of two hours each the Society will have time enough to accomplish all legitimate business if reasonable despatch be employed, and as a matter of fact it would doubtless be gratifying to the members as a whole to have cut short for lack of time much of the irrelevant and futile speech making that is annually indulged in.

To reduce the number of sections is a good suggestion. Of what use is it for instance to have a special section of pathology and physiology? In a large society like the American Medical Association, which includes in its membership scores of teachers and specialists in these branches, a section of pathology and physiology might hope for an audience of respectable size, but in a state like Minnesota, where those having special knowledge of these subjects would not be likely to exceed a dozen, much interest cannot be expected, and as a matter of fact this section is usually buried by giving it a place on the program that cannot possibly be reached, where-

as if this department were merged with that of internal medicine those who contributed papers upon subjects of pathology or physiology would stand at least a fair show of being heard and by an audience of respectable size.

What is true of pathology and physiology is true also of the other sections that it is proposed to suppress. Take ophthalmology, otology, etc. By hasty and ill-advised action without due consideration, this section was in 1898 taken out of the section of surgery and given a place by itself with a separate chairman. As this action required a change in the constitution of the Society, the resolution carrying it had to be passed unanimously. What was the result? The position of the section of ophthalmology on the program, following the section of surgery in which there was a list of twenty papers to be read and discussed in a single session before the section of ophthalmology could be reached, was so hopeless that its chairman made arrangements for it to meet simultaneously with the section of surgery, with the result already described, calling forth a protest from the chairman of the section of ophthalmology at the business meeting of the Society the next forenoon.

Whatever is done in the matter of changing the plan of operation of the Society, let it be done deliberately and with due consideration so that a settled policy may be finally decided upon. There has been too much shifting back and forth in the plan of work; it is unsettling to be constantly changing the routine, adopting a new course before the Society has become fully accustomed to the old one. A proposed change is sprung upon the Society without warning and is passed without discussion before its full significance and effect is realized. A matter of fact a change in the constitution of the Society is rarely justifiable without previous notice except where an obvious error or omission is corrected. The subject of a change in the plan of operation of the Society will come up at the next meeting in the form of a proposed amendment to the constitution limiting the length of papers and of debate. Let the members of the Society think the matter over during the coming year, and better yet let them express their views in the medical journals, so that when action is finally taken it may be thoughtful and deliberate action and not a jump at the first experiment proposed.

## BOOK NOTICES.

*A System of Medicine.* By Many Writers. Edited by Thomas Clifford Allbutt, M. A., M. D., etc. Volume VI. New York: The Mac-Millan Company. 1899. (Price, \$5.00. For Sale by the St. Paul Book and Stationery Co.)

This volume deals with diseases of the circulatory, muscular and nervous systems, the chapters on the circulation being in conclusion of the subject which was begun in the fifth volume.

The article on angina pectoris, by Sir R. Douglas Powell is one of the best accounts of this interesting disease that is to be found in medicine literature, and leaves upon the mind of the reader a clear picture of the various forms of the affection, not only as regards their pathology but their symptomatology, prognosis and treatment. The chapter on the kindred subject of arteriosclerosis, by Dr. F. W. Mott is also an excellent one, and this is said without disparagement of the rest of the contents of the book which are of first rate quality and by authors of eminence.

*Progressive Medicine.* Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; etc., Volume II. June, 1899, Philadelphia and New York. Lea Bros & Co., 1899.

The contents of this volume are Surgery of the Abdomen, including Hernia, by William B. Coley, M. D., of New York City; Gynæcology, by John G. Clark, M. D., of Philadelphia; Diseases of the Blood, Diathetic and Metabolic Disorders, Diseases of the Spleen, Thyroid Gland and Lymphatic System, by Alfred Stengel, M. D., of Philadelphia; and Ophthalmology by Edward Jackson, M. D., of Denver.

Progressive medicine has taken a strong hold upon the fancy of the medical profession and that it deserves its success may be judged by the extracts from the work that have already appeared in these columns. One of the great points about the work is that it prefaces the report of recent progress by a sketch of the affection under consideration so that its articles are valuable and instructive to the student as well as to the practitioner of medicine.

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## MISCELLANY.

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### THE INTERNATIONAL CONGRESSES OF THE EXPOSITION OF 1900.

#### THE THIRTEENTH INTERNATIONAL CONGRESS.

The program of the Thirteenth Medical Congress, which will be undoubtedly the largest and most important of the hundred and more con-

gresses officially recognized during the exposition of 1900, has now been issued. The date of the Congress (from the second to the ninth of August, 1900) has been chosen so as to allow its members to attend, before or after, other allied congresses of practitioners, on medical ethics and on hygiene. The object of the medical congress, is, moreover, exclusively scientific.

All doctors of medicine may become members of the Congress on payment of the subscription fee—twenty-five francs. The French committee and the other national committees may also present for membership scholars of known reputation. The card of membership is necessary for sharing in the privileges of the Congress. Each member will have a right to the summary of the proceedings of the congress and to the printed reports of the section to which he belongs.

The Congress has been divided into twenty-five sections arranged under five principal groups:

1. Biological Sciences: Descriptive and comparative anatomy; histology, with embryology and teratology; physiology with biological physics and chemistry.

2. Medical Sciences: General and experimental pathology; bacteriology and parasites; pathological anatomy; internal pathology; hygiene and medical pathology of children; therapeutics and materia medica; neurology; mental diseases; dermatology and syphilography (which two also furnish the matter of a special congress held separately).

3. Surgical Sciences: General surgery; children; urinary surgery; ophthalmology; laryngology; rhinology; otology; stomatology.

4. Obstetrics; gynæcology.

5. Public Medicine: Medical jurisprudence; military medicine and surgery; naval medicine; colonial medicine.

All propositions relating to the work of the Congress should be submitted to the executive committee before the first of May, 1900. Each section committee is charged with the organization of its own program, hearing of reports, discussion of questions, various communications. The discourse pronounced at the two general assemblies and the section reports are to be published in the proceedings of the Congress. French is the official language of the Congress for all international relations; but, in the general assemblies as well as in the different sections, German and English may also be used.

The following members from the United States have so far been designated for reports: Jacobi, of New York, on artificial lactation and the use of sterilized milk; D. Buckley, New York, syphilis and associate infections; Taylor, New York, causes of generalized infection in blenorrhœa; Ashurst, Philadelphia, radiography in the study of fractures and dislocations; Brad-

ford, Boston, treatment of Pott's disease (beginning phase and formation of gibbosity); Christian Fenger, Chicago, conservative operation in renal retentions; W. W. White, Philadelphia, remote results of operative treatment of prostatic hypertrophy; De Schweinitz, Philadelphia, (ophthalmology) comparative value of enucleation and operations proposed as substitutes; Bosworth, New York, pathogeny and treatment of suppurative ethmoiditis; Montgomery Baldy, Philadelphia, surgical treatment of cancer of uterus; Lagardo, lesions from rifle balls of minimum caliber.

The president of the American committee is Prof. Osler, Johns Hopkins University, Baltimore.

#### FIRST INTERNATIONAL CONGRESS OF MEDICAL ETHICS.

An important congress on medical ethics is to be held for the first time during the Paris Exposition of 1900, under the patronage of the French government. This Congress should be carefully distinguished from the long established International Medical Congress or Congress of Medicine. The two associations neither conflict with each other nor do double work. For this reason, and for the convenience of members who may wish to take part in both congresses, the dates of meeting have been so arranged that one immediately follows the other. The Congress on Medical Ethics will open its sessions on Monday, July twenty-third, and close the following Saturday. The Congress of Medicine opens on Thursday of the next week and lasts until August 9, 1900.

The French title of the new congress aptly describes its scope—"Professional Medicine and Medical Ethics (Deontologie)". It is essentially a congress of practitioners and appeals especially to national, state and county medical associations. It will also concern directly professors of medical jurisprudence and all who are interested in the economic and ethical details of the profession. Besides the general and section sessions, important lectures will be provided. Only physicians and the legal counsel of medical associations are admitted to take part in the discussions as active members; their subscription fee is fifteen francs. The wives of active members and medical students will be admitted to the sessions of the congress on payment of a subscription of ten francs. Representatives of the press may ask for special admission cards. The meetings will not be open to the general public, and the section sessions will be held in the halls of the medical faculty.

The subjects of discussion will be divided up among the four sections: 1. Relations of the physician with the state and organizations depending on it, and the laws regulating medical



practice; relations with organizations not depending directly on the state; medical service in respect to public assistance and charities, poor-law, public and private hospitals and medical charities; the position from the economic point of view of medical officers of health and other sanitary functionaries; relations of medical practitioners with the judicial authorities; and finally the utilization in time of war of the service of medical men who are no longer liable to military service.

2. Relations of the physicians with individuals: with his patients, dispensing chemists, trained nurses, midwives, manufacturers of surgical appliances, etc.; questions concerning medical practice by unqualified persons.

3. Relations of the practitioner with his medical colleagues (medical deontology); consultations, clinics and medical institutions, locum tenens, the sale of practices; relations between medical practitioners of different nationalities; professional medical societies and the formation of medical unions to defend the economic interests of the profession; other societies of medical men.

4. Questions relating to mutual aid and assistance among members of the profession, such as insurance in case of illness, a fund for old age pensions, and help for the widows and children of medical men. The papers to be submitted to the Congress are of two kinds: Reports, which will be printed and distributed before the opening of the Congress (the manuscripts of these reports must be handed in to the committee of organization before the first of January, 1900).

Communications (in French, German or English) which should be presented to the Committee in summary form before the 1st of July, 1900. The words of the London Lancet of May 6, 1899, may be applied to the United States: "This is an unique opportunity of placing on record an account of what has been accomplished in England, which would stand side by side with the descriptions of what has been achieved on the Continent, and appear in the official report of the Congress, thus constituting a lasting and important page in the history of the medical profession." In Germany the ministry which has medical affairs under its supervision, has brought the Congress officially to the notice of the various medical unions, which are to choose representatives authorized to speak in their name. The Brussels and Vienna faculties contribute important papers. The Secretary-General of the committee of organization is Dr. Jules Clover, 37 rue du Faubourg Poissonniere, Paris.

#### TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DERMAGRAPHY.

The eighth section of this Congress is devoted to general and international hygiene. It has chosen for its special study in 1900 the prophylaxis or preventive treatment of tuberculosis in

army forces, both land and sea. The official reporters on the subject, Doctors Landouzy and Mosny, of Paris, have appealed for information to competent persons of good will in the different countries. Apart from answers to the systematic questions which they have prepared, they are anxious to receive printed or written documents in the matter, such as reports, the text of laws and proposed laws, orders and regulations, statistical and graphic tables, which concern tuberculosis and the frequency of the disease, the measures taken to combat it, and the results obtained when such measures have been applied.

It is hoped that the labor which is thus undertaken by the International Congress may help to enlighten the different countries on the best methods of beginning a national struggle against tuberculosis.

The questions concerning land and sea forces of the army are divided into three groups:

1. Frequency, during the last decade, 1888-1898, of the mortality from tuberculosis—for each year the totals of forces actually under arms; of general mortality; of mortality from tuberculosis; of men discharged for tuberculosis. During these ten years, has tuberculosis appeared more frequently or more rarely in land forces, artillery, engineering corps, equipage, cavalry, infantry, mountain troops, nurses, bureaus, in divisions collectively—army corps, garrisons, regiments, schools, hospitals, barracks and rooms, and in camps; according to grade, officers, non-commissioned officers, soldiers; according to date, men newly enlisted or for several months under arms?

In sea forces relative frequency of tuberculosis among cannoniers, fusiliers, top-men or machinists; according to type of ship, wood or iron, iron-clads, cruisers, transports, torpedo boats? special to certain ports; according to grade; according to date—men newly enlisted, after several months, veterans?

2. Preventive measures taken during ten years, 1888-98: Recruits—regulations of examining boards in regard to men suspected of tuberculosis. Application of regulations. During service, measures prescribed for men attacked by tuberculosis, discharge or isolation in hospital. Measures taken in infirmaries and hospitals; in barracks and camps; in military or naval schools on board ship.

Results of such measures—on total mortality from tuberculosis in army or navy. On general morbidity. On mortality or morbidity in collective divisions chiefly affected—army corps, garrisons, regiments, barracks, hospitals, schools—ships.

It should be remarked that this section of the Congress of Hygiene does not duplicate the work of the Congress of Medicine proper, which

occupies itself only with the scientific nature of tuberculosis (bacteriology) and with the pathology of the disease. The Congress of Hygiene is concerned with the sanitation and preventive measures, both generally and from an international point of view.

The secretary of this section of the Congress is Dr. Ernest Mosny, 64 rue de la Victorie, Paris, France.

## NOTES.

### The Inflammatory Condition in Peritonitis, Etc.

An interesting reference to an extensively prescribed remedy is found in that valuable text book, "Materia Medica and Therapeutics," by Finley Elingwood, A. M., M. D., Chicago. The substance of the article is to the effect that the influence as a pain reliever of the popular analgesic—Antikamnia—is certainly next to morphine, and no untoward results have obtained from its use, even when given in repeated doses of ten grains (two five-grain tablets). It is especially valuable during the progress of inflammation, and given in pleuritis or peritonitis it certainly abates the inflammatory condition, relieves the pain at once and the diffused soreness shortly, as satisfactorily as opium. It does not derange the stomach or lock up the secretions. It is also of value in pain of a non-inflammatory character, and is a convenient and satisfactory remedy in headaches, without regard to cause, if the cerebral circulation be full.

### Summer Complaints of Infants, Children and Adults.

The following prescription has been used for some time by a prominent Philadelphia physician, who states that he considers it almost a specific in Summer Complaints:

Liquor Bismuth, Glyco-Thymolene (Kress), of each two ounces, mix. Dose: a teaspoonful as often as may be required.

Glyco-Thymolene (Kress) may be combined with Bismuth, Tr. Opii, Camph. Tr. Opii, Mistura Creta, Syr. Rhei. Arom., etc.

Administered internally Glyco-Thymolene (Kress) acts as a carminative, antiseptic, alterative, stimulant, antacid and meets many of the requirements of the physician during the summer months.

Glyco-Thymolene (Kress), diluted one ounce to the quart of water, used as a sponge bath, stimulates the skin secretions.

An enema of Glyco-Thymolene (Kress), one ounce to the pint, will be found most valuable.

### Warner's Pocket Medical Dictionary.

Warner's Pocket Medical Dictionary is an up-to-date work in every sense of the word. The latest medical terms have all been added, 10,400 words, terms and phrases are spelled, pro-

nounced, and defined. The definitions are concise and comprehensive. Type bold and easily readable. Paper and binding neat and especially serviceable. Bound in flexible leather, round corners, colored edges. Complete tables of arteries (6 pages), bacilli, spirilli, streptococci, micrococci, bacteria (11 pages), muscles (24 pages), nerves (12 pages), dose table (14 pages). This latter comprises a complete list of all drugs with their doses arranged in apothecaries' measure and their metric equivalents. Every one of its 413 pages is well written and will prove a valuable addition to the library of quick reference books of any physician. It will be sent to any address upon receipt of 75c, stamps or money order. Address W. R. Warner & Co., Philadelphia.

### Acute Dysentery.

In an editorial on dysentery, Dr. St. J. V. Graham (Georgia Journal of Medicine and Surgery, July, 1899) states that the drug treatment of this disease resolves itself into five or six drugs—calomel, opium, ipecac, tannopine, salines and quinine. If the case is seen early when diarrhoea is present, with a lead colored or brown tongue, much benefit may be derived from giving calomel,  $\frac{1}{4}$  grain every fifteen minutes, until six, eight or ten doses are taken. An acid saline is then administered, after which bile usually begins to flow. This is nature's antiseptic, and no chemical compound or so-called intestinal antiseptic can be compared with it. After this has been kept up for a sufficient time for the exigencies of the case, tannopine should be administered, combined with ipecac and opium, in the form of Dover's powder, or of each drug in simple powder combination. Tannopine should be given in ten or fifteen grain doses every two and one-half or three hours. An ice bag over the belly is preferred by the writer to any form of poultice. If necessary the bowels are irrigated with a bisulphate of quinine solution—one teaspoonful to a quart of cold water. Very little quinine will be absorbed, for it will not stay in long enough. The diet should be carefully adjusted to suit individual peculiarities and the stomach digestion. Stimulants should be used as indicated. The above treatment, which is indicated in acute cases, has proved very successful. In chronic cases, however, an essentially different drug treatment should be resorted to.

I have used Sanmetto in a great number of genito-urinary diseases, also as a builder of strength throughout the genito-urinary tract, always with the happiest results. This is the first and only testimonial I have ever given in twenty years' active practice of medicine.

C. H. Eckert, M. D.

Marion, Ind.

## ORIGINAL ARTICLES.

## THE LITHÆMIC HABIT.\*

BY FLORENCE C. BAIER, B. L., M. A., M. D.  
Owatonna, Minn.

The attention of the medical profession has, of late years, been directed very largely to the microbic theory of disease. Conditions that have baffled mankind for centuries become clear as noonday when the existence of a causative germ has been demonstrated. Theoretically investigations into the realm of bacteriology are without limit. Practically, the end will not be reached until we know both what diseases are of microbic origin and also the preventive and therapeutic measures with which to combat them.

But while bacteriology has been making such wonderful progress, it is just possible that we have lost sight of the fact that mischief to the human body may originate strictly within its own economy, and "it is a reasonable conclusion that because of the waywardness of our organism, the diseases of autoöorigin should be studied, as well as those of a more definite germinal character, coming from without, it being the fate of our structure that many of the diseases to which flesh is heir are born within us."

Excretion and elimination are as essential to an animal as air, water and food, or auto-intoxication will be the result, from the ptomaines elaborated by and in its own body.

It was long held that the presence of uric acid in the system is to be accounted for by the incomplete metabolism of the nitrogenous food-products, either through some failure in the metabolic power of the body, or because too much proteid matter or too little oxygen was furnished the body. A recent writer in the Medical Record says: "The researches of Hertraczewski and Kossel have shown that uric acid is the end product of nuclein; moreover, that the so-called xanthin bodies are intermediate states in the uric acid formation. \* \* \* When the xanthin bodies are not completely oxidized, they are not readily eliminated, and circulate within the body, causing intoxication, or, as it is called, auto-intoxication. Experiments with these substances upon animals produce symptoms closely allied to such diseases as rheumatism, gout, lithiasis, etc., and these diseases are considered by many to be of this nature."

This theory seems plausible and yet leaves some things to be explained. Still another writer upon this subject, says:

"Upon one fact, however, all investigators whose work is entitled to serious consideration

agree, and that is that uric acid has very little if anything to do with the symptoms of lithæmia. Uric acid is physiologically inert, its injection and ingestion in the lower animals is unattended with toxic symptoms. It is probable that the agents responsible for the symptoms of lithæmia are the xanthin bases, one of the three groups of alloxuric bodies of which the hypoxanthin bodies and uric acid make the other two groups. The alloxuric bodies are probably all due to the catabolism of the nucleins of the body. \* \* \*

It is true, however, that when a faulty nitrogen metabolism takes place, as in lithæmia, the formation and consequent excretion of the alloxuric bodies is increased. The elimination of these bodies takes place by means of all the emunctories, but principally by the kidney; consequently the urine contains an excess of these bodies in lithæmia. Kolish has shown that in gout, undoubtedly very closely allied to certain forms of lithæmia, the xanthin bodies are increased and uric acid is diminished. \* \* \* Briefly, then, the toxic symptoms of lithæmia are due to the circulation of the xanthin bases in the blood, while the pains so common among lithæmics, are probably due to the mechanical irritation of uric acid salts upon the peripheral nerve endings." Uric acid is a normal constituent of urine, and exists in a definite proportion to urea. But the amount in the urine is not always an index of the amount locked up in the body, and it is only when it can be made to appear in the urine in excess that the body begins to recuperate from the ravages of its presence.

When the blood is normally alkaline, there is no excess of uric acid in the system, because the alkaline substances of the blood dissolve it, and its excretion goes on uninterruptedly.

When through some defect of metabolism or excretion the alkalinity of the blood is lowered by excess of uric acid, it thus interferes with its own elimination. Under these circumstances it may be precipitated out of the blood into the organs and tissues. Deposited thus in the form of minute crystals in some of the joints, we have the disease termed gout.

Some persons, even whole families, appear to possess that dyscrasia that leads to the lithæmic diathesis. One writer goes so far as to classify all temperaments as acid, alkaline and neutral, the latter being the normal one. Certain diseases are prone to attack persons of the alkaline temperament, but they are markedly free from those that beset persons of the acid temperament, and conversely, the latter have a repertoire of maladies wholly their own. The object of treatment in either temperament is to restore it to the

\*Read before the Southern Minnesota Medical Association, August 3, 1899.

neutral or normal, and, of course, the lines of procedure differ widely.

The general belief in the needed purification of the blood doubtless has its foundation in a fairly general condition.

Dandelion and dockroot, sarsaparilla and sulphur have merely given place to more scientific and accurate pharmaceutical preparations.

Manifestations of the lithæmic habit are protean; some, easily diagnosed, as gout; others, so obscure as to reveal their true origin only after the adoption of antilithic treatment.

When we come to study the symptomatology of lithæmia, we find that any organ of the body may be the apparent seat of disease, but functional disorders of one sort or another are the commonest expressions of the lithæmic habit.

Furthermore, the lithæmic individual may betray his diathesis invariably by one kind of seizure; or such a one may show his condition now in one way, and now in another. In the same person the nerve storm may bring on at one time a so-called bilious attack, at another migraine at another nervous dyspepsia, or some form of headache.

Besides the manifestations just noted, there are neurasthenia, arthritic and muscular symptoms, cutaneous affections and vaso-motor disturbances of various and opposite sorts; gastrointestinal disorders, catarrhs of the several mucous membranes, myalgia, neuralgia, melancholia, asthma and possibly hay fever. The entire urinary tract may suffer from the excretion of a urine heavy with uric acid and its congener. To name the complications and remote sequelæ to which the lithæmic habit may give rise would be to enumerate most of the diseases to which human flesh is heir, for in speaking of lithæmia, Haig himself says, "that it influences the function, nutrition and structure of every organ and tissue in the body from the skin outside to the most central fibres of the spinal cord and brain within."

As a rule probably in the vaso-motor disturbances uricacidemia influences the vaso-constrictor fibers chiefly, yet the inhibitory fibres are by no means rarely affected.

In one class of lithæmics the capillaries are contracted and obstructed, producing tension, with a slow pulse, hard and small. Chilly sensations, with cold extremities, are the result. Some people never perspire, and are seldom warm, and suffer extremely in sudden changes of the weather, and with the onset of the cold season, for added to the constitutional diathesis are the climatic influences which every one feels and the system of people, under lithæmic irritation, fails to adjust itself quickly, if at all, to changed external conditions. Some people suffer with chilliness in the earlier part of the day, beginning

on rising in the morning and continuing some hours.

This is due to the fact that a larger percentage of uric acid and allied substances is present in the morning hours than at other times. After its elimination, the arterioles relax, the normal circulation is less interfered with, and the skin and extremities become warm.

Exercise is known to promote elimination of uric acid. May it not be explained that in the lithæmic individual the passivity of sleep favors the retention, and perhaps the formation of the alloxuric bodies, and that it is only after moderate exercise that their excretion begins? This capillary contraction may lead to grave results, both in internal organs and in the nutrition and structure of the skin. It has been suggested that Raynaud's disease may have its origin in unrelieved lithæmic irritation. As has been said the lithæmic may suffer from the opposite form of vaso-motor disturbances. The skin and extremities will burn, perspire, become red and puffed, and hot flashes, in the case of a woman, may suggest some menstrual or uterine disorder. Hyperidrosis, either unilateral or general, may occur from the capillary relaxation of lithæmia. The pulse varies accordingly, being full and soft.

Cutaneous affections, whose primary cause can be traced to lithæmia, are numerous.

Under the influence of the uric acid diathesis, increased secretion from the various mucous membranes of the body is no uncommon occurrence. In such cases the catarrhal discharge is often acid to litmus paper. Further, these catarrhs from the nasal cavities or the intestines, or from the uterus and vagina in women, so often alternate with rheumatism or gout or headache or at least so often follow and relieve these conditions, that their common origin is an inevitable conclusion, not to mention the brilliant success of antilithic treatment in such cases.

The entire urinary tract, as has been already said, will suffer from the irritation of uric acid and allied products in the blood. The exact phase which the trouble assumes will be determined by anatomical peculiarities and conditions and by the results of previous lesions. If long continued and unrelieved, permanent injury to the structures will result. Of no part of the body is this more true than of the kidney, and Bright's disease is no rare sequel of the lithæmic habit.

Arterial sclerosis and organic heart affections are also among the possible sequelæ of lithæmia.

Gout has long been described as a disease due to the presence of an excess of uric acid in the blood, or at least of its deficient excretion, and the deposition of urates in the joints and adjacent tissue, but it is only the comparatively recent writers who see in gout and in the disorders of the lithæmic diathesis one and the same

condition presenting itself under different phases.

The expressions of the lithæmic habit touched upon in this paper are rather cautiously and tentatively referred to by some writers as "irregular or abarticular gout;" even so exact a writer as Loomis talks of "misplaced gout, gout that has retroceded from a joint to an internal organ; also called visceral, masked, internal and metastatic gout." He says further: "The sequelæ and complications of gout are numerous. Those referable to the nervous system are vertigo, neuralgia, headache, stupor, convulsions, delirium, apoplexy and lunacy. Those referable to the vascular system are arterial degeneration, angina pectoris, cardiac palpitation and valvular disease. Those referable to the lungs are asthma, \* \* \* and bronchitis. Referable to the digestive tract is a long list of gastro-intestinal catarrhs, cirrhosis of the liver, jaundice and cirrhotic kidney." But why call all these "misplaced gout or its sequelæ." It is more scientific to see in all a common cause, the lithæmic habit, and therefore affections simply coincident or alternative with gout.

Admitting the capacity of uric acidæmia to affect every organ and tissue of the body, it will be readily appreciated that it may simulate almost any known disease. Especially is this true in its arthritic manifestations.

When we come to consider the treatment, a few general principles must be followed in accordance with certain indications. Excess of uric acid and allied substances must be removed from the system; their source of supply must be diminished in amount; all the organs of the body, the gastro-intestinal tract and the liver in particular, must be stimulated to perform their functions; greater amounts of oxygen must be introduced into the system. As the neurotic element is many times plainly discernible, in accounting for the failure in metabolic power, the better nutrition or the temporary stimulation of the trophic nerve centers is necessary. Diet, hygiene, exercise, electricity and medicines, all play their part. To fix upon a diet that shall contain all the food principles in necessary proportional amount, and yet reduce to a minimum the work done by the kidney must be the study of the physician. The patient should cultivate abstemiousness in all things. Plainly the nitrogenous element can not be wholly excluded. Enough must be taken to replace the loss from tissue metabolism. Fats, milk, white meats, cheese in very small quantities, fish, cautiously used, may take the place of the large quantities of all kinds of meats to which many of these patients are accustomed. If the lithæmic is distinctly gouty, sugar, all sweets, preserves, confectionery and the like, starchy foods in excess should be forbidden. Fresh vegetables, the cereals, fruits

that are not markedly sweet or acid may also be used. Tea, coffee and alcoholic beverages are to be used in great moderation, if at all, because they are apt to interfere with proteid metabolism. All changes in diet should be gradually made.

Diet alone will no doubt in time correct the tendency to lithæmia, and certainly if a suitable diet is not enforced, over-indulgence at the table may go far in destroying the effects of the best treatment.

Water should be freely drunk. It raises blood pressure and thus flushes the kidneys. Distilled water is the best and its efficacy may be increased if it is taken hot before meals and at bedtime.

Water is as valuable without as within, in stimulating the excretory function of the skin. If the patient be robust, a cold bath every morning, followed by brisk rubbing, is the best. Otherwise a warm bath at least every other day should be insisted upon. Active exercise in the open air is of the greatest value because of the greater amounts of oxygen that will be appropriated by the system. Walking, riding, bicycling, outdoor games are all to be recommended. If the patient is unable to make use of active exercise, massage may be employed, but it should always be remembered that it is a temporary expedient, a substitute greatly inferior to active exercise. Even if a patient is weak, walking and gentle calisthenic exercises can be begun and gradually increased. Electricity, especially in such cases as are distinctly rheumatic or gouty, is of great service. It acts as a tonic to muscle and nerve. It stimulates sluggish organs, equalizes temperature and circulation, allays pain, promotes absorption and excretion.

Since lithæmia is caused by the presence of toxic agents in the system, their elimination constitutes the cure.

Bowels, skin and kidneys are the channels through which this must be accomplished. Calomel, in one relatively large dose, or in repeated small amounts, may be used in beginning treatment. If constipation, which is quite common, persist, it may later be combated by the aloin and strychnine compound pills, or by cascara sagrada in some form. Generally, however, this will be unnecessary, as a gentle laxative effect can be secured by the use of sodium phosphate, and, in any case, this should be employed once or twice a day, as unquestionably inactivity of the liver has not a little to do in the production of lithæmia.

In cases where gastric symptoms are especially pronounced they may require temporary treatment. Fowler's solution, nitro-hydrochloric acid, lactopeptine, some form of hydrastis, or a compound digestive tablet can be used to advantage here.

Elimination of the alloxuric bodies through

the kidneys is, however, the main thing. To secure this nothing has been found to excel the lithia salts. The carbonate and the citrate are commonly used in effervescent form. I have found the bitartrate in a compressed five grain tablet more efficient. It should be dissolved in a glass of water, and drunk within the last hour before eating, never until several hours after a meal. If the patient thinks he can not drink a full glass of water at once, it may be sipped or taken at intervals. It is a good diuretic, dissolving and eliminating the retained toxins. Further it does not at all disturb the stomach, a point to be greatly valued in those cases where there are already marked gastro-intestinal affections.

To recapitulate. In treating lithæmia we must secure a restricted diet, not too generous in the nitrogenous element, or in sugar and starchy substances that impede proteid metabolism. There must be exercise, either active or passive, varied and increasing. There must be free use of water, both internally and externally. Electricity, of one form or another, is a valuable adjuvant. Among medicines, such may be sparingly used as meet temporarily urgent symptoms. Sodium phosphate is the best to stimulate the liver and act as a laxative. Reliance for permanent relief must be placed upon the lithia salts, bitartrate of lithium being the one to be preferred.

#### CONSTIPATION IN INFANTS AND YOUNG CHILDREN. ITS CAUSE, NATURE AND MANAGEMENT.

BY C. G. SLAGLE, M. D.  
Minneapolis.

Constipation is the bane of our high civilization, and infants and children are by no means exempt, as we all appreciate by the frequency with which we are called upon for advice and treatment concerning it.

"Constipation may be said to exist whenever the stools are less frequent, harder and dryer than normal."—Holt. In determining whether an infant is constipated or otherwise, the number of the stools is of less importance than the character of the discharges, for a child may have two or three stools in twenty-four hours and still be constipated, if the stools are dry, small and hard, and passed with more or less effort. If the bowels are bound from obstructive or mechanical causes, it may properly be termed obstipation; if otherwise, constipation.

The late Prof. J. Lewis Smith, in his admirable text book on "Diseases of Children", discusses the subject under two types or forms: 1st symptomatic, second, idiopathic. In the first he classes the obstructive causes as malformations,

intestinal displacements, occlusions from substances swallowed or from hardened fecal masses, abscesses, tumors, peritoneal inflammation, etc. These are all obstructive causes and therefore symptomatic, while the constipation which is purely idiopathic results from numerous and diverse causes other than these, as too little liquid in the excrement, food deficient in quality or quantity. Habits thus early formed is a common factor also.

Smith further draws attention to the fact that "an abnormal length of the colon—so that it doubles on itself, increasing the flexures, tends greatly to constipation, whether it be congenital or the result of chronic constipation." This idiopathic constipation comes on gradually, and therefore attracts little attention until it has become chronic.

One of the most frequent and painful results of constipation in infants is colicky pains in the bowels, but constipation may produce either directly or indirectly convulsions in young babies, or the too long retained fecal matter on the mucous membrane of the lower bowel may cause a diarrhœa (nature's method of relief.) Hence we often have alternations of constipation and diarrhœa in infants. Another effect of constipation in young children, if neglected, is either prolapsus of the rectum or a mucous dysentery from irritation and inflammation of the lower bowel. I have more than once observed that during an epidemic of dysentery, those babies or young children who have been affected with constipation are very prone to the affection, and less amenable to successful treatment.

Indeed the baneful effects of constipation in young children can hardly be overestimated—as they are often so insidious and various in their manifestations, and lay foundations for many morbid conditions which develop later in life. Doubtless much of the chronic constipation, and its resultant ills, so common in adults, has its origin in very early life, for when questioned as to when their constipation began, they will often answer that they cannot remember, but it seems to have existed more or less since early childhood.

I think it is safe to assert that no human being can enjoy perfect physical and mental vigor, who is habitually constipated, as it is not unfrequently a predisposing factor at least to all sorts of pessimistic tempers and ultimately to mental alienations and suicides. Dr. Everts, a very high authority on insanity, says: "Constipation is an almost invariable concomitant of insanity." Show me a man or woman who has been long suffering from chronic constipation and I can assure you of an irritable, morose and melancholic individual who is always fault finding and "don't see much in this gloomy world to live for anyhow."

\*Read in the section of Obstetrics and Diseases of Children at the Minnesota State Medical Society, June 23, 1899.

But excuse this episode, we are today discussing only constipation in infants and young children.

In a very well written paper read at the 1898 meeting of the A. M. A., at Denver, Dr. Thomas C. Martin, of Cleveland, O., under the title "A Further Contribution to the Study of the Difficulties of Defœcation in Infants" called attention to the important fact that there are other anatomical conditions than those specified in our text-books, which tend greatly to obstruct the fœcal evacuations in infants until outgrown or remedied. Those anatomical peculiarities consist for the most part in the "convoluted gut" the "valvulated rectum" and often "the contracted anus," and suggested the remedies, as dietary, hygroscopic suppositories, fluid enemata, massage and daily dilatation of the anus with the well oiled finger.

The classification of Dujardin-Beaumez is based upon the different causes of constipation, as first, those due to mechanical obstacles (i. e., obstipation) occlusion of the bowels, etc. Second, where the cause is ailmentary, most of the substances injected being assimilable, and hence the stools restrained and rare. Third, where there is deficiency of the gastric juice. Fourth, where it results from defective contractility of the muscular tunics of the intestines. Fifth, due to loss of the reflexes which control defœcation, as in affections of the spinal cord, or else where there is produced great pain at the moment of expulsion, as a fissure of the anus. "Hence the treatment," says our distinguished author, "must be hygienic, (i. e. regularity), alimentary, hydrotherapeutic, lavage, massage, suppositories, enemata, etc. while the medical treatment (if any) should be only supplemental to other means." Martin says that nurslings should have two to four stools a day during the first three or four months and one to two after the first year. When less frequent than this he regards the child as constipated. Further "transient or habitual constipation" may be due to retained meconium, stricture of the intestines, atresia ani, etc. "Symptomatic constipation" to the febrile state, cerebral disorders, etc. "Alimentary constipation" to simple or sterilized cow's milk, excess of casein or mineral salts, deficient sugar or fat, etc. "Congenital constipation" to intestinal occlusion, excessive length of the folds of the large bowel, etc., etc. I have been compelled to reject the sterilized milk furnished by a firm in this city on account of its strong constipating effects on several infants in my clientele.

We not unfrequently find infants who are constipated from birth, at least during the first year. They are usually born of arthritic or nervous parents and this is a rebellious form of constipation, and must be met with baths, massage, dry friction and often with enemata and glycerine

suppositories. If brought up on the bottle much can be done with the dietary, as oatmeal water, cream, sugar water and the malt preparations, and as they are generally nervous and fretful at night, much may be done with the bromides and nuxvomica as "nerve-sedatives" and muscular excitants combined, though these are more adapted to older children (three to seven years). Sometimes a little flaxseed tea will serve well in these cases. If laxatives are to be given at all, magnesia, calomel (with rhubarb and soda,) phosphate of soda, bitartrate of potash, sal Rochelle, cascara sagrada, olive oil, glycerine, senna and manna constitute the therapeutic armamentarium for constipation in nurslings and young children. It is a well observed fact that rickety and strumous children suffer from constipation, and for these the malt preparations with cod liver oil are especially indicated.

After the natural and mechanical causes of chronic constipation in young children, the most common are errors in diet, defective training, and not infrequently the habit of giving castoria, castor oil, rhubarb, syrup of figs, and other physics, as also a prevalent notion of giving opiates and carminstones—as astringent teas, etc.—for colic and other disquieting affections so common to early life.

#### TREATMENT.

Probably the best means of overcoming constipation in young children (as suggested by Holt) are diet, habit, massage and an occasional enema, or suppository. Diet can be rendered laxative by the addition of some of the malt preparations, fruit juice, etc., or of milk by adding cream and sugar water (one or both). If a child two or more years old, less white bread, toast, crackers, potatoes, etc., and more green vegetables, oatmeal, graham, corn or rye bread, and opiates and carminatives—as astringent teas, etc. The gluten suppositories of the Health Food Company are best for continuous use, as glycerine suppositories are too irritating to be long continued.

The alimentary of nurslings: A little sugar water (after Jacobi), cow's milk four parts to one of sugar water, and rectal lavage with a urethral catheter (two tablespoonfuls of glycerine to one litre of warm water), or two tablespoonfuls of olive oil with the yolk of one egg to four drachms of water, etc.

Massage by rubbing the abdomen in one of two ways has been recommended by Holt: thus beginning at the right groin, the hand is carried up to the ribs, then across to the opposite side, then down to the left groin, superficially at first, then with deeper pressure as the child becomes accustomed to it. The second method is by rubbing the deeper parts with a circular movement, the fingers, not moving on the skin, making a

series of small circles, beginning at the right groin and following the same course as in the other method, these movements to be employed six or eight minutes twice daily at any time, excepting never soon after a meal.

For steady movement of the bowels in an infant or young child, an injection of sweet oil, a tablespoonful, or glycerine, one-half teaspoonful to a tablespoonful of warm water, or tepid soap and water, a gill to a pint, according to age, or a glycerine suppository, may be employed, but none of these are to be used habitually, only occasionally in emergencies, to supplement other less objectionable measures, while you are endeavoring to establish "a moving habit" of natural movements.

This subject, constipation, emphasizes the importance of studying children's diseases separate and apart from those of adults, as the causes, nature and management are very markedly diverse from those of later life.

I desire to emphasize the importance of establishing "regular habits of stool in early life," for without this "regularity" nothing permanent can be done. In infancy this can best be done by the methods already discussed here (as diet, massage, suppositories, etc.), but children a little older can be taught to heed the first impulse to evacuate the bowels, and regular habits can hardly be formed unless the same time each day is chosen for the movement, that time to be preferred as soon after the morning meal as possible. "Even in an infant a few months old," says Holt. "the habit of regular stool is often easily formed, if the child is put upon the chamber or 'chair' invariably at the same hour." All children should be carefully watched in this respect, and nurses should be impressed with the importance of the early formation of this "habit." "With nursing infants, who get good breast milk, constipation is not so common, but where milk of any sort is low in fats and high in proteids, constipation will be common," and where fat cannot be increased by dietetic treatment of the mother, the infant may be given, immediately after nursing, from one-half to two teaspoonfuls of cream, according to age and the degree of constipation.

Holt remarks again: "In feeding cow's milk constipation can be overcome by getting the exact proportion of casein and fat which are suited to the individual infant. With most infants, during the early months, from two to three per cent. of fats and one per cent. of casein succeeds best, while with those a little older three or four per cent. of fat and one and one-half per cent. of casein will be required, and during the last half of year, four per cent. of fat and two or three per cent. of casein will be found satisfactory. However, to feed a young infant upon two per cent. of fat and two per cent. of casein, which is what is usually given when cow's milk is simply diluted

once with water, almost invariably produces constipation."

From all this it is evident that to discuss infantile constipation satisfactorily involves the discussion of the great subject of infant foods and feeding also.

As food is recognized as the most common causative factor in producing constipation, all pædiatrists agree that milk should be the principal diet of young children up to at least two or two and a half years, or until the completion of first dentition. I will say, however, that during the second year children who suffer from constipation should have both cream and water added to the milk, so that instead of getting three and a half per cent of fat and four per cent. casein of plain milk, they get four per cent. fat and three per cent. casein. "These proportions," says Holt, "can be obtained approximatively by adding two tablespoonfuls of cream to a two-thirds glass of milk and filling up the glass with sterilized water, while further improvement may be brought about by reducing the amount of starchy food and adding beef juice or meat to the diet, which is quite laxative on account of its salts, etc."

Now, to summarize what we have said of the "management of chronic constipation in infants and young children." It will be either palliative or curative. The palliative means are laxatives, enemas, suppositories, etc., while the curative measures consist of diet, habit, massage, etc., carefully managed and persistently employed for several weeks or months.

"An average case of chronic constipation in a child, say three or four years old," says Holt, "may be managed as follows: massage for eight minutes morning and evening; the juice of half an orange and a small glass of vichy immediately on rising; a breakfast of oatmeal with an ounce of cream, dried bread with butter, an egg (soft), half glass of milk with cream and water added; a dinner with soup, one starchy vegetable (potato), beefsteak (rare), one green vegetable, baked apple or prunes, dried bread and butter, and only water to drink; supper: cream toast, egg (soft), dried bread and butter or graham crackers, half a glass of milk with cream and water added; this, with an occasional suppository containing nux vomica and hyoscyamus at bed time, will suffice to complete the treatment."

If the child is puny, dyspeptic and suffering from malnutrition, tonics and nutrients will be indispensable, among which quinine, iron and strychnia, or nux vomica, tincture of barks, and the hyphosphites with extract of malt, cod liver oil, etc., will be the most efficient.



## THE RELATION OF PELVIC DISORDERS TO NERVOUS AND MENTAL DISEASES,\*

By C. EUGENE RIGGS, A. M., M. D.

St. Paul.

There was a time in the medical history of the country when the positions of gynæcologists and neurologists upon the subject of operative interference in the pelvis as a treatment for nervous and mental disease were sharply in opposition. The extreme view of one school was that the greater part of mental disturbance in women arose from some pelvic disorder, even when no appreciable lesion could be discovered, and that operative interference, even to the extent of removing apparently healthy organs, was justifiable in the hope of somehow effecting a cure. The extreme view of the other school was that there was no relation between the two disorders, the nervous system alone being responsible for its own troubles. In the last few years gynæcologists and neurologists have approached much nearer to each other's standpoints and each has learned to appreciate the arguments of the other. We do not find today prominent representatives of either of these extreme views, but there is still a good deal of difference of opinion as to the exact role pelvic disease plays in mental and nervous conditions.

At the meeting of the American Medical Association in Denver last year the subject was largely discussed by the gynæcologists and neurologists in joint session. I recall that Dr. Price, of Philadelphia, put himself on record as believing that intrapelvic disease is largely responsible for nervous and mental disturbance in women. He cited case after case in his own experience where the cure of pelvic conditions was followed by the disappearance of mental symptoms. Dr. Bucke, of London, Ont., states that a large number of operations for pelvic disease in the asylum under his charge yielded eighty per cent. of cures of mental conditions. Experiences like this, however, are so rare as to be practically aside from the point, for it is by the common consensus of experience that such questions are settled; and I believe the common consensus of experience yields quite a different result.

It is a question whether the irritation arising from the uterus and ovaries has any more debilitating influence over the nervous system than an irritation of equal strength arising from the stomach or kidneys. Personally, I do not believe that it has, and, if, in any given case, there seems to be a difference between the evil results in these differing forms of irritation, I think it is more due to auto-suggestion on the part of the patient than to the real disease. From time immemorial the woman has been taught that dire consequences are sure to follow disease of the pelvic apparatus, and should there be the slightest ap-

prehension or positive knowledge of trouble in those parts, she feels that the Pandora-box is opened and that anything may be expected. Naturally she attributes all bad symptoms to this source. This introspection and concentration of the mind upon the condition of a single set of organs is able of itself to produce the various hysterical disturbances so common in these troubles. I do not doubt in the least that disease of the pelvic organs can bring on neuropathic and hysterical conditions in neuropathic patients, but the point upon which I do insist is that the patient in whom these conditions exist as a result of pelvic disease was neuropathic to begin with. The effect which pelvic disease or any other disease has upon the nervous system depends upon the nervous heredity behind the patient, that is, upon the stability or instability of the individual organism. While it is undoubtedly true that a large proportion of insane women suffer from pelvic disease, it has not yet been proved that the ratio is larger than in women who are not insane. It has also been a matter of observation that in certain conditions a most pronounced form of pelvic disease produces no untoward results. I recall the case of a woman suffering from neurasthenia and major hysteria. She had a retroflexed and adherent uterus. She refused to have any operative measures taken, and under rest and over-feeding all of the neurasthenic and hysterical symptoms disappeared. Before she left me she was able to walk five miles a day with no inconvenience and has been well ever since. This, of course, is an exceptional case; in other individuals the same local disturbance might determine the most persistent and distressing nervous symptoms. Yet it seems to me that this case does make it clear that even when pronounced pelvic trouble exists along with pronounced nervous symptoms, the two troubles may be entirely independent of one another.

A person who has not the normal nervous vitality, one in whom the resistance of the nerve cells is lowered, is the person in whom you are likely to get the various grave manifestations of nervous disease. These would be particularly likely to show themselves at the pubescent, adolescent and climacteric periods, because the nervous system is undergoing its greatest strain at these times, and if there are any pernicious hereditary tendencies, they are likely to come to the surface. Many of the conditions, such as atrophied uterus and painful menstrual periods, that show themselves at these epochs and are supposed to be due to pelvic troubles per se, really have behind them a failure of developmental energy. The psychoses occurring at these periods that are supposed to be the result of pelvic conditions are the outcome of these persistent irritations upon an excitable nervous heredity. The mental storm is the expression of a deteriorated

\*Read before the Section of Nervous Diseases of the Minnesota State Medical Society, June 21, 1899.

brain-cell, although it is not impossible that had it not been for the "last straw" of bad local conditions, the nervous state might not have developed and the dangerous period have been passed in safety. But it is only in a predisposed person that a local irritation can overcome the inhibition of the organization. The inhibition being defective, it is easily reduced and it does not matter particularly what is the final irritation that precedes its failure. It is not an infrequent thing to have attacks of insanity following the use of anæsthetics, yet you would hesitate to say that anæsthetics caused the insanity. Here it would be the case of an ill-balanced organization thrown out of equipoise as a result of the use of an anæsthetic, and the shock and apprehension on the part of the patient.

My own theory of treatment in either nervous or mental disease is, I believe, that of most neurologists. All sources of local irritation, whether pelvic or otherwise, should be removed as far as possible, concurrently with the handling of the neurasthenic, hysteric or mental condition. Nothing should be neglected which can in any way tend to the patient's comfort or welfare. An insane person should be treated like any other person in this respect. The defective organization may have been thrown off its base by some local irritation, or it may be that it would have been thrown off anyhow. All that science can do is to remove the irritation. It is my own belief that no operative procedure can modify the abnormal irritability of a nerve cell and the accompanying lack of inhibition, and I think that in the majority of hysteric and neurasthenic conditions we shall still find these difficulties remaining to be combated after the removal of local irritation, but, of course, the better the general and special physical state, the greater the ease with which such conditions may be met.

It has been urged that in insane and hysterical patients the suggestive influence of an operation is great. As far as hysterical conditions are concerned, this suggestive influence is a two-edged sword. It may remove or may deepen the hysteric condition. Certainly, physicians make a great mistake when they promise patients that any operation, no matter how needful and important, will remove all hysteric and neurasthenic symptoms. For there exists—say if you please that it is the result of the local conditions—a debilitated nervous system and a perverted functioning of it, which remains after operation as a definite factor to be dealt with, and which in the majority of instances the local treatment will in no way remove.

I shall never forget the emphasis with which the younger Charcot said to me: "Jamais, jamais, never, never, operate in a hysterical case for the removal of the hysteria. The patient is likely to become more gravely hysterical than

ever, more hopeless, more pitiful after an operation than before it." I can recall in my own experience, and doubtless my confreres can do the same, living examples of this last statement.

As regards the operation of oöphorectomy in particular, I think physicians have grown more conservative recently. The idea that the ovaries, like the thyroid gland, secrete some substance that is necessary to the poise of the nervous system—an idea emphasized in this country by Dr. Sherwood-Dunn, of Boston, following Brown-Sequard in France—has had some influence in inducing conservatism in operations, and it is now customary to leave at least a part of the ovary if the conditions at all admit of it, where formerly it would all have been removed. Also, surgeons now hesitate to precipitate an artificial climacteric—which in my experience is a far more serious matter than the physiological one—where it can be avoided.

Before undertaking this article I wrote to a number of distinguished alienists asking what had been their experience as to the results of operative interference by the removal of the uterus and its appendages in insanity. Dr. Edwin Cowles, of the McLean Hospital, Waverly, Mass., writes as follows on this point: "There have been half a dozen cases perhaps within my knowledge of patients in this hospital who had ovaries removed before coming, or the operation done afterward. There were no good results in these cases, but it should be said that one of them operated upon here did not long survive the operation; in the other cases the operation was made too late, after dementia had become determined. I remember a consultation with Dr. Homans a few years ago in which I approved of ovariectomy in a case of great hysterical disturbance at the menstrual period. There was entire relief for a year or two, when, if I rightly remember, the trouble reappeared."

Dr. C. B. Burr, of Oak Grove Hospital, Michigan, laid down the following platform several years ago:

"1. Let no patient suffer from local symptoms that can be relieved by treatment.

"2. Beware lest in applying treatment a delusional condition be intensified. In such an event let medical efforts be directed to the nervous system strictly, the probability being that with an improvement in nerve tone the local symptoms will disappear or become unimportant.

"3. Operate only for diseased conditions previously diagnosed, and for the same reasons that would obtain in patients not insane.

"4. Never, under any circumstances, operate to unsex a recent case of insanity with the idea of healing the mental condition, except there be present disease of the uterus or appendages previously made out and not amenable to other treatment."

Dr. Burr states that he believes this platform sound, and that he has nothing to add to or take from it.

Dr. Manton, of Detroit, believes that "active conservatism along this line has a great future." Dr. Manton's platform, stated at the same meeting of the Michigan State Medical Association that called forth Dr. Burr's, is as follows: "In summing up my conclusions, based on many years' experience in the practice of gynecology among the insane, I have no hesitancy in presenting the following:

"1. That insane women have both a moral and a legal right to amelioration from suffering dependent upon local disorders, without reference to the effect that such relief may have upon their mental condition—that is, as regards cure.

"2. That indiscriminate operating upon the insane, especially the removal of normal appendages for the so-called cure of insanity is not only to be deprecated on account of its utter uselessness, but also denounced because of the unnecessary mutilation of the patient."

In a private letter Dr. Manton says: "Whether or not we can cure insanity by operative intervention is a matter of not so much importance as the fact that we can relieve somatic suffering and further the well-being of our patients by such means. It has always seemed to me that in the effort to cure the mental affliction men have too largely and generally lost sight of the bodily discomfort and pain which it should be their first duty to ameliorate."

Dr. Richard Dewey, of the Milwaukee Sanitarium, Wauwatosa, is firmly of the opinion that "in all cases where operative interference would be justified, per se, by the condition of the uterus and adnexa, the case should be operated upon; in other words, the sole guiding principle is the actual condition of the pelvic organs."

Dr. R. M. Phelps, of the Rochester Hospital, this state, suggests as one argument against operative interference on general grounds that there are probably more cases of insanity following operations than there are of cures following them, and it is impossible to prove that either the insanity or the cure is directly caused by the operation. He says truly that "in many cases, so far as we now know it, insanity is a half functional affair. There are many ups and downs, many improvements and apparent recoveries. The treatment which is under way gets the credit of the change, but there is a good deal of proof that the changes are completely without order, and often occur without any treatment."

Dr. Linton-Phelps, writing several years ago, when operative interference on general grounds was more common than it is today, says that her experience, first as resident physician in a general hospital for women, and afterward in an insane hospital, convinced her profoundly that

there was as much and as varied uterine disease among the mentally sound as among the insane. The general result of gynecological work among the insane has been disappointing in her observation as regards direct mental results, but it has been valuable as a factor in connection with other treatment in building up the general health of the patient. This, I think, will be found to be more and more the accepted view among all candid physicians.

#### HYGIENIC PROPHYLAXIS THROUGH LEGALLY ENFORCED VACCINATION AGAINST THE CONTAGION OF SMALL-POX AND THE CURE OF AND CLIMATE CHANGES FOR PERSONS INFECTED WITH TUBERCULAR CONSUMPTION THROUGH A GRADDED COTTAGE AND GOVERNMENTAL PARKS SYSTEM.

BY E. E. BIGELOW, M. D.

Owatonna, Minn.

It is not my purpose to present to you a paper extending exhaustively into all the minutiae of prophylaxis, but I would call your attention to a few general steps which must necessarily be taken to lead up to a certain point in sanitary development in the human family before prophylaxis may be accomplished in the management and prevention of infectious diseases.

While as physicians our lives and resources are devoted to the scientific study and development of hygienic and remedial agencies through which the advancement of those diseases which are insidiously destroying the minds and bodies of a large percentage of our race may be prevented, we are too often checkmated by a large and apparently influential class of misguided people who, under different known and unknown "isms" or creeds, laboring under false conceptions, either under the guise of religious impressions or otherwise, more likely emanating from designing charlatans who machinate only for greed and pelf, whose opinions, especially in relation to vaccination, are too frequently lent a semblance of light and encouraged by an occasional member of our own profession, through lack of a proper conception of sanitary technique in professional work resulting in frequent cases of infection as a result of vaccination, a subject constantly dwelt upon, argumentatively, by antivaccinationists.

I personally knew a physician to vaccinate a whole colony of children, using bovine lymph points, making the scarification on the arms of the whole crowd without stopping to purify his thumb lance, with which he performed the several operations, until all were vaccinated. You can readily understand with what results, and

\*Read before the Southern Minnesota Medical Association, August 3, 1899.

as to how much powder was furnished the anti-vaccination crowd.

It is a well known fact that with the use of bovine lymph seconded by perfect cleanliness no untoward results follow; with pure bovine lymph supplemented by perfect aseptic cleanliness on the part of the surgeon, and a people educated up to a point of interest that laws may be passed requiring children to be successfully vaccinated before being allowed in any school, either public, private or parochial, to attend church or to travel in any form of public conveyance, can we only expect to be free from the annual visitations of smallpox.

My principal desire is, in this paper, to cast in my mite towards the development of some plan that may become conducive to the prevention of the insidious extension of tuberculous disease, by taking up the consideration of the defensive ground of a nation for the prevention of the further invasion of its subjects by an enemy which, though apparently slow in action, is surer than bullets in its destructive power, an enemy that has already encompassed in its death-dealing grasp one-fiftieth part of the entire world's people, and is now successfully causing the death of one-third of the world's people between the ages of fifteen and sixty years. (See report of the committee of the American Medical Association for the session of 1899.)

It is with a sense of almost helplessness that we move a step towards the development of a defensive system, that during leisure hours I have speculated much upon, as the only feasible plan that would meet with any success in placing a barrier in the way of a disease, which at its present progressive ratio, if not brought under control, must at no very distant day involve the health and happiness of the whole human race.

When tuberculosis has been announced by an attending physician, the first great stride towards insuring the accomplishment of prophylaxis can only be brought about through legal process, the patient being passed to the care of a legally constituted board of health, which, in turn, has full power to act in cases of tuberculosis as in other contagious or infectious diseases, and to use all needed rigidity in applying its authority. While such measures may appear heroic as a sanitary means, and often very distressing to relatives and friends, nevertheless if the world is to be rid of the terrible ravages of a disease, slow in its course, but sure in its destruction when it once clutches its victims, heroic measures must of necessity be applied and the infected be placed in quarantine.

In time the custom would be so established that when convinced of the necessity of self-protection, the grievance would be to a great extent mitigated. Quarantine can be established with the least grievance to the patient, relatives and

friends, and with the greatest surety of success, through a system of graded cottages and hospitals within each state for those advanced in the disease to the incurable point, and climatic change for those in the incipient stages of the disease and with prospects of restoration to health. This system should be provided for through national and state patronage, both the national and state governments acting in concert under proper laws and regulations established to govern the same.

Can this be accomplished? We believe that it can. The time seems ripe for such a movement. When all nations as one people have become so thoroughly aroused upon the subject of the great ratio of progress tuberculosis is making throughout the entire world, that they are calling national and international conventions whereby through consultations they may devise some means through which by combined action its further advancement may be checked, is it not an opportune time for the medical profession of our country in conjunction with the enlightened people of the state, to so present this question to our congress and to the several state legislatures as to secure the necessary legislation providing the means for the establishment and support of a system of parks supplied with cottages and hospitals and combined gymnasiums and playhouses? For this the United States government can well afford to set aside six full townships each six square miles, say one in each of the Western states or territories as may be advised by a National Board of Sanitation, each park, if possible, to be located near an inland lake or lakelet, and to provide each park with six cottages, a gymnasium and playhouse combined, and a hospital equipped and supplied with physicians and nurses, and the parks with necessary conveyances and coachmen, and to support and protect its temporary sojourners in a happy, homelike manner by regular annual appropriations, however not prohibiting the wealthy from paying their own way.

Now, as to the cost of this national project: Six townships of land would not, if sold to regular settlers, deducting the cost of sales and getting the proceeds into the United States treasury, exceed one dollar per acre, which would be for a township of thirty-six sections \$23,040, and for six townships \$138,240. Six cottages to each township at \$6,000 each, an average cost of \$36,000 for each park or township, a total of \$216,000 for cottages. One hospital fully equipped for each park at an average cost of \$20,000, a total of \$120,000 for hospitals and their equipments: one gymnasium and playhouse combined equipped, \$10,000 apiece for each park, a total of \$60,000, or in round numbers \$534,240, which is on an average of only one-fourth the cost of the war ship Oregon.

The provision for the maintenance of these parks should be borne by the national government, and each state government should provide a single park equipped with cottages, hospital and gymnasium and playhouse, located if possible on the border of a small lake.

The state parks should become the permanent abiding place of incurables, and the national system should take temporary control of those having prospects of a return to health and coming from any state in the Union.

The park system need not interfere with private or philanthropic institutions erected for similar purposes, although all institutions for the care and control of tuberculosis should be under the control of a national commissioner of sanitation.

The medical fraternity should advocate and exert every means within its power to bring it about that an independent governmental department of national sanitation and vital statistics under the control of a commissioner of sanitation should be provided for by Congress, which, in conjunction with a state board of health, should have jurisdiction over the national and state park systems and all questions pertaining to state or national quarantine.

While exerting ourselves to accomplish these permanent arrangements, there are many grave and important obstacles to be overcome. The world's people are by persistent effort to be educated to understand that anything of an unsanitary nature will conduce more or less to render themselves and offspring susceptible to tubercular infection, and when attacked under those conditions less amenable to treatment; that a babe born to a tuberculous mother should be prohibited its mother's breast; that all milk before being consumed by any person should be heated to the boiling point and then carefully cared for; that a tuberculous member of a household should be isolated and not allowed to occupy sleeping apartments with others; that all expectoration and dejecta should go into vessels provided with disinfectants and properly disposed of; that atomizers charged with disinfectants should be supplied to the infected in order, as far as possible, to render the breath of the patient aseptic; that expectoration upon floors in all kinds of buildings or public conveyances and on sidewalks should be prohibited, lest through evaporation and drying the tubercular bacteria may become liberated in the air and be respired into and infect healthy lungs; that hotels and other public inns should be required by law to provide special rooms for traveling tuberculous patients, and a commensurate penalty for putting an uninfected person into an infected room before the same has been thoroughly disinfected and ventilated; that all persons should be prohibited from entering upon any duties connected with

our schools, academies or colleges, public or private, or from occupying any public office where he or she may come into daily contact with the public, before securing from a legally formed board of examining surgeons a certificate of health and freedom from tuberculous disease.

Finally, that the United States government should through a commissioner of sanitation make frequent inspection of all dairy cows, and when these are found infected with tuberculosis, have them slaughtered and cremated and by regular appropriations for the purpose reimburse the owners. One great object of a nation should be to protect its subjects, and so should our great national government do. A finer physical race would be the result. With a strong race of men the nation will have strong and brave soldiers ready to do battle when duty calls. Should our nation fail to provide for the safety and health of its subjects, the time will be but too short before it will be called to defend its territory with an army of weaklings and be destroyed by a stronger race.

It must necessarily take time to perfect such a sanitary scheme, but I believe some of the younger members of our profession will live to see this, the only feasible plan to free our race from tuberculosis, an accomplished fact.

#### THROAT AND NOSE DISINFECTION IN THE PRESENCE OF DIPHTHERIA.\*

By J. H. ADAIR, M. D.

Owatonna, Minn.

The treatment of diphtheria at the present time is based upon and modified by bacteriological investigations to an extent that does not obtain with any other disease. It is not alone the fact that the specific cause has been isolated and its manifestations become thoroughly known, but the cure and prevention of the disease itself have been in a sense carried along with this increasing knowledge until it is safe to say that we now stand prepared to cope successfully with the most treacherous and deadly of infantile scourges, in its acute manifestations at least, and that with an agent itself the direct outcome of the exact and scientific investigations of the disease.

It is of the greatest importance, therefore, I take it, that we become informed as to the sources of infection by the bacilli of diphtheria, and the best and readiest method of eliminating, if possible, these bacilli from their hiding places when once they are found to be present. I believe these points to be well established and settled in the minds of the profession beyond a reasonable doubt:

\*Read in the section of Practice of Medicine of the Minnesota State Medical Society, June 21, 1899.

First, that the manifestations of diphtheria are the direct result of the presence in the system of the poison or toxin elaborated and set free by the Klebs-Loeffler bacillus.

Second, that the severity of the condition produced in acute cases is in direct proportion to the amount of toxin absorbed by the system.

Third, that the bacilli themselves may remain in the tissues of the throat and nose and be demonstrated microscopically long after all clinical symptoms have disappeared, and lastly, may be present in cases that have shown no clinical symptoms at all, and may be proven to possess a considerable degree of virulence by animal inoculation.

Circumstances have permitted me to undertake, in part, a series of investigations during the past three years in order, if possible, to demonstrate the exact conditions under which these bacilli make their appearance in the tissues of the throat and nose, their relative degrees of toxicity, and the measures best calculated to check their spread from throat to throat. The data upon which these conclusions are based were derived from a study of 1,075 cases, comprising children of all ages from one to eighteen years, among whom were encountered 134 cases of clinical diphtheria and from whom were obtained 8,000 cultures. A portion of these children, 275 in number, were kept in absolute individual isolation, and under conditions admitting of the most careful oversight, and in which the chances of reinfection were reduced to the minimum by each child being placed in a room by itself, a separate set of utensils provided, together with the apparatus and agents employed in the treatment of the throat and nose, and the treatment itself carried out faithfully and efficiently by an attendant who practised disinfection of the hands and change of outer garments before passing from one child to another. All clothing, dishes and bedding used by each child were thoroughly sterilized by boiling after use, and each room received a fresh coat of hot whitewash in the interval between the removal of one child and the admission of another, while the floor was scrubbed with a bichloride solution of 1-3000.

Each child was kept in isolation and under treatment until three consecutive negative cultures were obtained from both throat and nose, when he was allowed the freedom of the society of his peers, but was still retained in buildings apart from contact with the outside world, and the same care was exercised to prevent reinfection by exposure and intermingling as obtained during the period of individual isolation.

Sixteen per cent. of these children had sustained attacks of acute diphtheria at some time within the preceding two years, and having been allowed the privilege of mingling freely with the rest, both in school life and in their homes or

cottages, had undoubtedly become the unwitting agents for the dissemination of the specific bacilli.

A systematic examination of the throat and nose of every child was made upon admission and before beginning the treatment, and the results obtained were as follows:

The throat and nose were found to be fairly normal in twenty-two per cent. of all cases examined.

The throat alone was normal in forty per cent. The nose in thirty-six per cent. Some degree of hypertrophy of the pharyngeal tonsils was observed in thirty-five per cent., and swelling of the tubinates in twenty-eight per cent.

Acute coryza with mucous or muco-purulent discharge (this I believe dependent on the season of the year, early winter), was present in twenty-two per cent., and evidences of chronic pharyngitis of a mild character were found in seventeen per cent. of these cases. Acute pharyngitis was noted but six times on examination, and the presence of *b. diphtheriæ* was demonstrated in only one-half of these. Perforation of the septum was found in one case; nasal concretions in one case; deflections of the septum in five cases; dacryocystitis in one case, and atitis media purulenta in twelve cases. In twenty-one per cent. of all cases there were obtained three consecutively negative cultures from both throat and nose at the beginning of treatment, and in forty per cent. of all cases the first examination of both throat and nose was negative so far as the presence of the diphtheria bacillus was concerned.

The agents employed in the attempt to rid the tissues of bacilli were: First, corrosive sublimate. This was used in strengths varying from 1-500 to 1-2000, the latter principally, and while no ill effects were apparent from even the long continued use of the stronger solutions in several of the larger children, the results obtained were no more satisfactory than with the weaker ones.

Irritation and smarting was complained of by a number of the smaller children with the 1-2000 solution to such an extent as to compel the stopping of treatment for a short time, and I am convinced that where the sublimate is used, solutions of 1-3000 and even weaker should be employed.

Sodium sulphite in connection with Seiler's solution in the proportion of one drachm of the former to one ounce of the latter was used in a large number of cases, both for its detergent action upon the nasal mucosa, and in the hope that some amount of sulphurous acid might be liberated during the operation. I am convinced that no effect was produced by this preparation as a germicide.

Hydrogen dioxide in a fifty per cent. solution was employed as a spray to both throat and nose, separately and before using the other agents

named, and when followed by the sublimate solution, a considerable reduction in the number of positive findings was observed. Sulphur applied by insufflation, Loeffler's solution reduced in strength, and ichthyol in five per cent. solution were all used in a series of cases without any appreciable effect upon the findings.

Formalin in the strength of one-half per cent. solution was found to be more destructive than any of the other methods employed. This was especially marked when, as was the case, it was used in connection with the sublimate solution.

The irritant properties of formalin, however, constitute serious objections to its use in private practice, nor do I believe that in strengths sufficient to produce germicidal effects, the majority of patients will tolerate it for any length of time.

One hundred and sixty-four children, after having given, as has been stated, three consecutively negative cultures from both throat and nose, and while in rigid quarantine, were examined again as to the presence of diphtheria bacilli, with the result that positive findings were obtained in thirteen per cent. of cultures from the throat and in forty-one per cent. of those from the nose.

Lest it may be thought that the facts and figures herein elucidated are in a measure unique of their kind and not fairly illustrative of general conditions, it may be said that a series of observations independent of the above carried out at the same time, however, developed the fact that the school children of two cities of southern Minnesota, between the ages of five and twelve, of all nationalities and tongues, and with positively no antecedent history of diphtheria either in their homes or in the community for years, showed the presence of the bacillus of diphtheria in as great, if not greater, proportion as the cases tabulated above.

From the study of these and other cases as I have had to do with them at all stages and in all places, I have personally formulated the following conclusions:

While the Klebs-Loeffler bacillus is undoubtedly present along with staphylococci and several other varieties of bacilli in every case of diphtheria, its mere presence is no guide as to its virulence or non-virulence.

This bacillus, or one morphologically identical with it, is present in the throats of nearly one-third of all children and possibly adults, although this last has not yet been demonstrated. It is found as frequently in the throats and noses of those who have never had clinical diphtheria as in those who have sustained acute attacks of the disease, but in the former is often of variant type.

It is found more frequently in the nose than in the throat. Abnormal conditions of the tissues of the throat and nose have no effect in determining its presence. The theory of many that

the apparent non-virulence of the bacillus in the throats of healthy children is due to toxin absorption and the consequent immunity produced thereby, is plausible but not proven.

Efforts to permanently dislodge the bacillus from the tissues of the throat and nose are in the present state of therapeutics futile and unavailing.

The bacteriological findings in the above were made in the laboratory of the State Board of Health under the direct supervision of Prof. Westbrook and Drs. Wilson and McDaniel, whose work is a guarantee of thoroughness and scientific accuracy, and to whom my thanks are due.

### PROGRESS IN MEDICAL DIAGNOSIS.\*

BY H. H. WITHERSTINE, M. D.

Rochester, Minn.

There is no other known science that offers so large a field of investigation as the science of medicine. It has been said that medical progress has not kept pace with that of surgery. This of course would mean that the diagnosis in medical diseases has not been as accurate as has been that in surgical diseases. With due respect to my surgical friends I must say in my judgment the impression is not correct. The symptomatology of the surgical diseases is more objective. Many of the diseases with which we have to contend are not pathological conditions discernible by the physical senses but have their being in a changed chemistry of the body, the determination of which may require chemical analysis and the use of the microscope.

In order that a reasonable scientific diagnosis may be made investigation must be pursued on the side of health in the one case, and on the side in all its parts must be familiar to the physician of disease in the other; that is, the healthy body before he can recognize disease. Therefore to know the human organism, anatomy and physiology must be most thoroughly comprehended. He must know the function each organ performs in the economy of nature and the relation it bears to all others. If not how is he to deal with complications as relative effects? He must know the constituents of body tissue and the chemistry of body fluids, else how can he determine by chemical analysis or microscopical examination that physiological equilibrium has been disturbed by morbid processes. A good mental picture is essential of the changes of food products into material capable of being appropriated by the various body cells. This material reaches the remotest cells through the blood current in order that growth may occur and repair be constant and sufficient. In this natural condition the tissue

\*President's address, delivered before the Southern Minnesota Medical Association, August 3, 1899.

cells of the organism appropriate such material from the blood current as is needed and reject what is not required in constructive metabolism. But where there is growth and repair there must be waste matter to be disposed of. Here we are confronted with destructive metabolism or retrograde tissue processes, the effete matter of which is carried away by the same blood current that brings to the cells material for growth and repair, to be disposed of by the various eliminating organs of the body. The study of constructive and destructive tissue metabolism is truly fascinating as well as positively essential.

When the material for tissue growth and repair is just sufficient, normal oxidation and elimination of the products of retrograde processes is complete; we then have a perfect physiological equilibrium and a consequent state of the highest constitutional resistance to disease. This condition we may define as health. Great progress in medical diagnosis is the result of a careful study of anatomy and the complex physiological mechanism from the standpoint of health.

Disease may be defined as a disturbed physiological equilibrium. It is pretty generally conceded that the acute diseases are mainly the result of pathogenic bacteria that in some manner find their way into the body from without, or of autoinfection from within the body. The toxic elements from these two sources of disease will disturb the health of individuals in proportion to the constitutional resistance to disease. The power of tissue cells to resist these toxic elements is not the same in all persons. It is the common experience of physicians to observe that some people will succumb to while others will be only slightly affected by the same amount of toxicity. This is many times largely due to the weakness or power of hereditary transmission, and the influence of heredity must be considered in a diagnosis upon which must be based treatment and prognosis. The slow toxicity of retained retrograde tissue waste products is very common, as is often seen in the nervous type of women whose nerve centers have been invaded by such toxic agents. These patients often have small sleeping apartments, poorly ventilated and therefore a reduced oxidation. This autointoxication frequently goes on until the patients become chronic invalids, take to the bed, stay indoors, lead an indolent life and do many other things which only increase physical and mental distress. Menstruation becomes disturbed and painful, for which so many apply to the gyn $\frac{1}{2}$ ecologist for relief. Urinalysis in these cases often shows a ten to twenty per cent. decrease in the elimination of urine solids and the microscope will reveal an anæmia to the extent often of a thirty per cent. reduction in red blood-corpuscles. It is study along this line that has resulted in great progress in medical diagnosis. This condition at first

acute, in time becomes chronic and the pathologic process so long and slowly in operation produces what may properly be termed a semi-degeneration of all the cells of the body. With this degeneracy of cell life we have a condition favorable to the development of tuberculosis and tubercular glands in the under-fed, and tumorous growths of all kinds in the overfed. Autoinfection, while it continues, produces continued systemic disease, while the diseases produced by the pathogenic bacteria from without are more local and self-limited in character.

In studying bacterial infection and auto-intoxication as sources of disease, the medical diagnostician is greatly aided by chemical and microscopic examination. It is due to the unfortunate sick that every legitimate means be employed that can aid in a full and complete diagnosis. Among the means for determining disease, physical examination is not by any means the least valuable. The trained eye to see, the trained ear to hear and the trained hand to touch will often reveal what can not be seen in the test tube, through the microscope or by means of the X-ray. I have known the X-ray to show fracture of the femur, when after the surgeon's knife opened up to view the bone itself no fracture appeared, and yet we know the X-ray has revealed many foreign bodies, knowledge of the position of which was of great value to the suffering one. I have seen negative results in the test tube and through the microscope when they should have revealed or might have revealed positive infirmities, and yet how often have they been positive for determining diseases?

What I desire in this paper to emphasize is a thorough physical examination, chemical and microscopical examinations, and the use of the X-ray if needed, and from these examinations as a whole draw the conclusions and then make the diagnosis. From a better knowledge of anatomy and physiology, from a better education of the physical senses, from a greater ability to gather information from the test tubes and through the microscope, we have been able to determine much more correctly the true conditions of health and disease, and as a result of all we have made great progress in medical diagnosis.

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Dr. Hildebrandt asserts that orthoform causes to cease completely the violent pain due to inflammation of the pulp of a decayed tooth. He introduces into the cavity of the tooth a plug of cotton steeped in an alcoholic solution of orthoform. The pain instantly disappears, and for a considerable time. Orthoform constitutes in such cases a simple remedy, and one which the patient can apply himself without danger.



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**SEPTEMBER 1, 1899.****THE REAL KISSING BUG.**

"Kissing bug?" said Prof. Lugger. "That is the common house scorpion. It can kill flies, but its forceps are too small to bite a human being. It hides under the water pipes and is rather useful than otherwise."

"It was an evil looking insect that was submitted to his inspection at the state agricultural college, with many legs and a poisonous aspect. It was one of a collection of 'kissing bugs' from all over the state. 'We have had twenty-three specimens sent here in the last three weeks,' said Prof. Lugger, 'and I have yet to see a genuine kissing bug. Here is a venomous-looking creature that was sent to me by the captor as a rare dime museum specimen. Do you know what it is? It's nothing more than a caterpillar with hornet tail. I have had dragon flies, mole crickets, the cockroach of the every day kitchen and even the common honey bee.'

"Many of the specimens are of the beetle family, the stag beetle, or the ordinary electric light bug. One creature with fangs long enough to slip into church and kiss an entire congregation proved to be a harmless beetle that never kissed anybody. Another dangerous specimen was simply a 'walking stick,' an odd affair as slim as a twig and hardly to be told from a bit of wood and bark.

"However," the professor adds, 'there is a spark of truth in it. A bug with this peculiarity does exist in the more southern states, called pyretes (cone-nosed sucker), which has a habit of crawling over a person sleeping and sucking the moisture from the face, leaving a poison which results very painfully and occasionally fatally. Any of the fatal results reported from the so-called kissing bug in northern states are caused by flies, mosquitos and other insects that carry poisonous germs from the refuse they come in contact with.'"

The above extract from a daily paper is only one of hundreds that might be quoted from the newspapers all over the country, some quotations in earnest and some in jest, but among these are many reports of bites from a supposed kissing bug, a name that has only lately been known among the public although the swollen lips and

eyelids of which it is supposed to be the cause have been frequently seen in the past. No doubt the talk about the "Hobson kiss" had something to do with the appearance of the insect that seemed to be in some respects an imitator of the naval hero.

There is seldom a widespread report that has not some foundation, and the talk about the kissing bug was no exception to this rule. Not that there has really been an appearance of a new insect with a poisonous sting and a special fondness for attacking the lips; the interview above quoted with Professor Lugger confirms the expected, that the alleged newly discovered kissing bugs are really insects that have long been known and never suspected of mischievousness, while the very variety of the bugs submitted to the entomologist shows that there has been no appearance of a new and widely spread species. The real basis of the reports lies in the undoubted fact that people have presented themselves with sudden and acute swellings of the lips and eyelids, and that the patients themselves, and often the doctors, have declared these swellings to be due to the bite of an insect without due care in making a differential diagnosis between insect bites and a not very common affection—*angeio-neurotic oedema*.

*Angeio-neurotic oedema* is a disease that has been given many names, of which the one selected here is by far the best. Baruch, of New York, in a recent report of cases, quotes a long list of names by which it has been called, among which are giant urticaria, localized transient oedema, acute non-inflammatory swelling, vaso-motor oedema, acute periodical swelling, acute circumscribed cutaneous oedema, and creeping oedema. Quincke, who has made a special study of it, regards it as due to a suddenly increased permeability of the capillaries, allowing an exudation of serum. This is an explanation that does not explain much, but it is very good and probably true as far as it goes, for it may be said in general that a considerable sudden swelling is sure to be either serum or blood, and the course of events with *angeio-neurotic oedema* shuts out the possibility that the swelling is due to blood. That there is a neurotic element in it is pretty clear, a disturbance of the vaso-motor nerves being essential to account for the sudden and circumscribed change in the blood vessels that

allows the exudation of serum. Heidenhain declares that the endothelial cells of the blood vessels possess a secretory activity, and if this be true it may alter the pathology.

The angeio-neurotic swelling is hard and dense in certain localities, as the forehead, while in other situations, as the lips and eyelids, where there is much loose connective tissue, it is soft and puffy, resembling hydropic œdema, with the important difference that it does not pit upon pressure. It has certain favorite seats, foremost among which are the face and extremities, then the penis and scrotum in males and the labia majora in females. As has been said, the lips and eyelids are favorite seats, and it will be observed that the newspapers have reported the kissing bug as operating particularly in these localities. One of the earliest articles describing the affection, a paper in the Boston Medical and Surgical Journal twenty years ago, named it "Sudden and Transient Swelling of the Lips," that being the part alone affected in the cases that had come under this writer's notice. The tongue is also not uncommonly involved, and the disease may be grave when swelling of the tongue or larynx threatens suffocation.

Although angeio-neurotic œdema much resembles urticaria, it is essentially different in that its seat is the subcutaneous cellular tissue, while urticaria affects most the superficial layers of the skin. From insect bites it is distinguished by the absence of a recognizable point of entrance of the poison; moreover, an insect bite that would cause the whole lip to swell would probably be so painful in its infliction that it could not escape notice.

Just where the story of the kissing bug started it is impossible to say. No doubt it was originally intended as a joke and came to be taken seriously. Cases of angeio-neurotic œdema probably seldom reach the physician because the affection, although somewhat startling, is painless and transitory. But after the report of the kissing bug had spread abroad, an attack of the œdema would assume greater importance and lead to a consultation with the doctor who perhaps meeting the affection for the first time would be glad to have at hand the plausible explanation of the bug. This would account for the sudden appearance of a considerable number of cases of a disease hitherto not often reported.

## REPORTS OF SOCIETIES.

### SOUTHERN MINNESOTA MEDICAL ASSOCIATION.

W. T. ADAMS, M. D., Secretary.

The eighth annual meeting of the Southern Minnesota Medical Association was held in Owatonna, Aug. 3, Dr. H. H. Witherstine, of Rochester, the President, in the chair.

After the invocation and the usual routine of business, Dr. Witherstine read the President's annual address; subject, "Progress in Medical Diagnosis." The doctor's address showed that the science of medicine has been wide awake and active during the past years, and occupies no mean position in the great march of progress alongside of surgery and kindred fields of research which go to make up the great science of medicine and surgery.

After the President's address the following papers were read, and each in turn received a more or less spirited discussion. Dr. Murphy took occasion to compliment Dr. W. J. Mayo on his method of performing cholo-cystectomy in disposing of irritable conditions of the gall bladder. (Dr. Mayo's paper will appear in the *Annals of Surgery*.)

"The Lithæmic Habit."—Dr. Florence C. Baier, Owatonna, Minn.

"Observations on Diagnosis of Diseases of Children."—Dr. L. E. Evens, Little Cedar, Iowa.

"Some Varieties of Aneurism."—Dr. C. H. Mayo, Rochester, Minn.

"Are Antiseptics Necessary in Obstetrics?"—Dr. J. Palmer Johnson, Owatonna, Minn.

"Dysentery."—Dr. E. H. Bayley, Lake City, Minn.—Read by title.

"Gall Stones."—Dr. W. J. Mayo, Rochester, Minn.

"Report of a Fatal Case of Embolism in a Child 18 Months Old."—Dr. W. T. Adams, Elgin, Minn.

"Concerning Events in the History of Medicine."—Franklin Staples, M. D., Winona, Minn.

"Prophylaxis of Tuberculosis."—Dr. E. E. Bigelow, Owatonna, Minn.

Dr. Franklin Staples' paper was read by proxy and the Society, by a unanimous vote, thanked Dr. Staples for his excellent paper and the very great interest he has always exhibited in the advanced thought of the science of medicine and surgery.

There was probably no paper which elicited so warm a discussion as Dr. Bigelow's. The radical position he took, that our state and national government should provide systems of parks and sanitariums of immense proportions and equip them with all sorts of conveniences for amusement and recreation, and maintain them at public expense, and then compel all persons

suspected of tubercular taint to stay therein, separated from the rest of the world, made him the target for all sorts of criticisms, some of scientific import and others from the standpoint of pure mirth. One speaker quoted statistics to show that the doctor's scheme would embrace some eighty per cent. of our population.

At the request of Dr. Bayley, his paper was read by title.

At the close of the regular program, Dr. J. B. Murphy, of Chicago, was called upon for an address upon any subject he might choose. Dr. Murphy kindly responded, and gave us an interesting resumé of the differential diagnoses of acute abdominal lesions. He said the time had come when the responsibility for these affections rests with the general practitioner and not with the surgeon. Surgery can take care of the case if given an opportunity at the correct time. The general practitioner very easily can and must fit himself to make a correct and timely diagnosis and call surgical aid at the correct time, for nearly every case comes first to the general practitioner. He emphasized these remarks and is inclined to take no excuse for inability, at least in the average case, to make a diagnosis. He then, in a most clear manner, outlined the various points to be considered in diagnosis, which we regret from our meager notes we cannot supply in full.

About sixty members of the profession, mostly from the southern part of the state, were present, and were generously entertained at dinner by the Steele County Medical Society.

The following committee on resolutions were appointed: Dr. R. C. Dugan, Eyota; Dr. J. B. McGaughey, Winona; Dr. Charles Hill, Pine Island, and the following is their report:

"Whereas, this Society and the medical profession of Southern Minnesota has suffered a great loss in the demise of Dr. W. T. English, of Winona; Dr. George Ranson, of St. Peter; Dr. M. T. Bascombe, of Pleasant Grove, and Dr. J. B. Cole, of Wabasha; therefore be it

Resolved, That the Southern Minnesota Medical Association profoundly appreciates the great loss it has sustained in the death of these members, and hereby extends its deep sympathy to the families of our deceased brothers."

The report was unanimously adopted.

The following officers were elected for the ensuing year: President, Dr. J. H. Adair, Owatonna; first vice-president, Dr. R. C. Dugan, Eyota; second vice-president, Dr. E. H. Bayley, Lake City; secretary and treasurer, Dr. W. T. Adams, Elgin.

The Society then adjourned to meet at Winona, the guest of the Winona County Medical Society, the first Thursday in August, 1900.

## MISCELLANY.

### SEPTEMBER MAGAZINES.

The Atlantic opens with an article by President Charles Kendall Adams on "The Irresistible Tendencies," and a more thoughtful discussion of the fundamental facts of civilization cannot be found. Jane H. Findlater discusses "The Scot of Fiction," and shows in a lively and entertaining sketch how a few Scotch characteristics have been taken as typical of a whole nation, and how largely misrepresented in literature the Scotch people have been, both as to their virtues and their vices; but that they still remain "with all the vigor, the intellectuality, the nerve of their race, and with its vices, too, a strenuous people capable of anything." Jacob A. Riis writes of "The Genesis of the Gang," and Prince Kropotkin continues his "Autobiography of a Revolutionist." Many other excellent articles appear in the issue.

Scribner's has a number of articles on camping, fishing and hunting—articles with an outdoor flavor which is especially delightful at this season of the year. The Stevenson letters are continued, and they also deal with life out of doors, giving an account of his life in the Saranac Lake region of the Adirondacks. With stories of a high order, with some real poetry, and illustrations that are beautiful pictures made to illustrate, this issue gives great promise for the winter months when one's magazine is a little more acceptable than anything else that comes to the center table.

Lippincott, in its new dress of type and paper, and its handsome cover, occupies a field without a rival. Its complete novel in every issue, and a table of contents beside the novel which would be a credit to any magazine, make it one of the most desirable home monthlies that this age of mental activity has produced. "The Duchess of Nona," a complete novel, ranks with the best fiction now appearing in book or magazine form, and the same may be said of the entire table of contents for September.

The Review of Reviews contains a remarkably attractive group of contributed articles. The timeliness of the subjects treated is seen by a glance at the table of contents. The war in the Philippines is summed up by John Barrett; the outcome of The Hague conference is set forth by W. T. Stead; the subject of trusts is discussed by George E. Roberts and by Henry Macfarland; Hezekiah Butterworth writes of "The Future Value of the New England Farm," while Prof. L. H. Bailey answers affirmatively the question, "Does Farming Pay?" Sylvester Baxter tells of the progress made by the state of Massachusetts in her public library system, and Gilbert K. Harroun describes the work of the Cuban Educational Association of the United

States; a sketch of "The New Secretary of War" is contributed by Henry Macfarland, while Dr. William Hayes Ward writes of Col. Ingersoll, and Erica Glenton of the late Grand Duke George of Russia.

The Ladies' Home Journal ranks high among the American monthlies, and as a purely home paper it surpasses all of them. The principal features of the September issue may be seen at a glance of its table of contents, with such articles as the following: "The Wayside Inn of Sudbury Town," "The Young Men and the Professions," "Why Six Million Letters Go Astray Every Year," "Nature's Garden," "The Prettiest Country Homes in America," "Dramatic Performances by Amateurs," "The Secrets of a Happy Life," "What It Means to be a Teacher," etc. But there is more than the mere title; each article is by a writer who has a right to speak upon the subject, and the illustrations are the finest that money can buy.

#### THE DIAGNOSIS OF EXTRA-PULMONARY COUGHS.

The phonograph is a valuable means of registering coughs, and gives a permanent record. Studied in this way we learn to recognize certain acoustic phenomena which are characteristic of every cough. An extra-pulmonary cough is to be suspected when a systematic examination of the lungs proves negative. To this rule there are striking exceptions in phthisis; the cause of the cough is not necessarily found in the lungs, but may depend on pharyngeal hyperæsthesia, or deformity of the epiglottis. Cough especially manifest during the swallowing of food would lead to a suspicion of pharyngeal hyperæsthesia. A cough aggravated by swallowing food may be due to an epiglottis deformed by tuberculous infiltration, which becomes incompetent, permitting the entrance of food into the larynx.

We must not forget that the conventional methods in the examination of the lungs are not always crucial in negating the presence of an anomaly. Skiascopy of the chest demonstrates the foregoing fact. To my mind no chest examination is complete without the use of the Roentgen rays; I employ them as a routine measure, as I do the low objective on my microscope, reserving the high power for detail work. I do not complete but initiate an examination with the Roentgen rays, and having located a suspicious lung area, the usual methods of examination are employed to interpret its significance.

It not infrequently happens in our chest examinations, where auscultation is alone of value in diagnosis, that no anomalies of the respiratory sound are heard unless special maneuvers are invoked. Natural breathing is of no value in such instances. The patient must be taught "diagnostic breathing." The muscles of expiration must be brought into forcible action, so that

expiration is intensified and prolonged. Auscultation of the lungs in different positions will, by increasing respiratory activities in definite areas, bring out certain sounds. One must not forget that in some persons forced expiration causes a bronchospasm and develops sounds not unlike those of asthma. In such a contingency amyl nitrite inhalations are valuable. If the subject inhales the drug, we need not fear mistaking the sounds provoked by voluntary spasm of the bronchial tree. In some forms of bronchitis spasm may be an element in the dyspnoea, and conversely a catarrhal factor may complicate an attack of asthma. Nitrite of amyl by inhalation removes the dyspnoea if occasioned by spasm, but does not influence it if dependent on bronchitis. To differentiate the râles caused by bronchitis from those of asthma, auscultate the chest after nitrite of amyl inhalation; the râles of the former persist, while the latter are dissipated. This drug, when inhaled, will bring out certain sounds which would otherwise remain unnoticed.—Dr. Abrams, in *Medicine*.

#### NOTES.

##### New and Finer Trains.

It seems to be the rule in railway management to make only such improvement in passenger service as competition necessitates. This, however, has never been the policy of the Northwestern line, as is clearly shown by the handsome trains it runs between the Twin Cities and Omaha, where it has practically a monopoly of the business. Another illustration of its desire to give the public the best possible service is seen in the new day trains between the Twin Cities and Duluth and Ashland. An all night ride between these cities is an abomination, and a mid-day train does not meet the needs of business men. The Northwestern now runs what it calls "The Twilight Limited," and it fills the bill exactly. It is a superb train of day coaches. Leaving Minneapolis at 4:15 p. m. and St. Paul a half hour later, it reaches Duluth and Ashland about 10 o'clock, and leaving Duluth and Ashland a little before 5 p. m., it reaches St. Paul and Minneapolis about 10 o'clock.

This gives an ideal service; for it saves a night on the train, and gives a business man from either end of the line a full day at the other end, at a cost of hardly an hour from the business day. Business men appreciate such enterprise, and they will not fail to reward it by their patronage.

I gave Sanmetto a trial in a case of gonorrhœal cystitis where all the usual remedies and Sanmetto imitations had failed, and it gave the desired result. Will continue to use it.

Hudson, Ia.

L. H. Sarchett, M. D.

## La Grippe; Its Manifestations, Complications, and Treatment.\*

By W. W. GRUBE, A. M., M. D.,

Of Toledo, Ohio,

Professor of Physiology and Clinical Medicine, Toledo Medical College, Toledo, Ohio.

Professor Grube sees no reason why the intelligent observer need err in his diagnosis of la grippe; he believes that the intensity of the catarrhal symptoms, the great prostration, and tardy convalescence form a typical clinical picture. Though the catarrhal symptoms are usually limited to the respiratory mucous membrane, they are not always so, and in the writer's experience the invasion of the mucous membrane of the digestive tract has been quite frequent. Not alone mucous membrane, but a part or all of the cerebro spinal axis has been invaded.

In many cases the so-called complications are simply an extension and aggravation of the catarrhal or inflammatory condition; thus an extension of the usual inflammatory condition of the throat through the Eustachian tube produces middle-ear complications; the bronchitis, too, may extend and become capillary, or even a pneumonitis may result. So we believe that in the so-called abdominal form with severe gastro-enteric catarrh, it may extend by contiguity and inaugurate a general peritonitis. Upon this theory alone can we explain the supervention of a severe general peritonitis in a case under our care, now happily terminating in convalescence.

The patient was a girl of 11 years who had never been seriously ill before. Twenty-four hours after the illness began she had besides the usual alarming symptoms of la grippe, a high temperature, wild delirium, constant emesis, frequent and copious discharge of feces and urine. The appropriate remedies were prescribed, the vomiting ceased and she rested; but on the third or fourth day she developed symptoms of peritonitis, abdominal pain, hardness and some tympanites, etc. Calomel was prescribed, twenty grains divided into four powders, one every three hours; also the usual turpentine stupes, morphia to quiet pain, etc. The next day, finding no improvement, but rather aggravated symptoms, green vomit, bowels not moved—a very gloomy prognosis was given, and at the family's request a consulting physician was called, who concurred in diagnosis and prognosis, and had nothing more to suggest. On the writer's return in the evening, however, he decided in view of the great mortality of these cases by the routine treatment, to try the local application of a mustard poultice; also, for their

germicidal, antiseptic and healing qualities, he gave internally Hydrozone diluted, in frequent doses, alternating with doses of Glycozone. In twenty-four hours there was slight improvement. In forty-eight hours the patient was decidedly better. Improvement continued, and the girl was so well February 21st that she was dismissed as cured.

Perhaps the most common complication in children is the middle-ear inflammation caused by extension of the pharyngeal catarrh up the Eustachian tube into the tympanum. In the case of a child six months old, recently under our care, we had a middle-ear complication in which the pain was controlled by the usual methods and by the instillation into the aural canal of a few drops of cocaine solution. After suppuration occurred, however, the canal was cleansed by Hydrozone solution (warm), and a piece of absorbent cotton saturated with Glycozone used as a dressing by inserting it into the canal. As the ear complications sometimes prove very serious, it is gratifying to know that in the above remedies we have a safe, speedy and effectual method of cure. We believe also that, if these cases were seen early, by proper treatment the extension and consequent complications might be prevented. In a little girl with severe tonsillitis and pharyngitis we are now spraying the throat with diluted Hydrozone and applying Glycozone with such marked benefit that on this, the third day of treatment, she is almost well.

In concluding Professor Grube states: "I cannot refrain from referring to the case of a prominent city official who had an unusually severe attack of la grippe. All the structures of the nasal cavities were involved in a severe acute catarrh, which progressed to the stage of suppuration. Enormous quantities of pus were secreted, and the location and intensity of the pain led us to fear involvement of the antrum. However, the free use of Hydrozone solution by spraying, and the application of Glycozone soon cleared up the cavity, and in a few days complete cure resulted."

### Hypo-Substitute for Opiates.

Dr. Obe F. Watlington, of Memphis, Tenn., writes in the Medical Brief: "I have in my possession a hypodermic alkaloidal solution, which is a specific in drug addictions (opium habituation, alcoholism, etc.). On receipt of a two-cent stamp, I will take pleasure in furnishing any of the medical profession the formula, by the use of which a number of the fraternity have been enabled to cure themselves of opiumism, alcoholism and insomnia. I used morphia hypodermically for ten years. Obtained a perfect cure by this prescription."

\*Abstract from the Journal of the American Medical Association, March 25, 1899.

**Neurasthenia in Girls.**

Yarnal (Medical Record) attributes to the exalted nervous sensibility of society-bred women the great tendency to develop neurasthenia. A large proportion of these cases are reflex in character, and occur during or immediately after puberty. Sometimes they suggest serious systemic diseases, such as insomnia, hemicrania, hysteria, neuralgia, etc. Many cases are cured by remedies directed chiefly to the organs of reproduction. The best treatment in the majority of cases is essentially tonic-ferruginous, stomachic or general, or a combination of these. Iron stands at the head of the list because it promotes digestion, enriches the blood and augments the supply of blood to the pelvic organs. Preference is to be given to the muriated tincture. This is when combined with strychnine and quinine, the latter being given liberally when malaria is probably a determining element.

A good formula is as follows:

Dioivurnia,  $\frac{3}{4}$ —IV.

Neurosine,  $\frac{3}{4}$ —II.

M. S.—Dessert spoonful three times a day.

As a uterine tonic the preparation with viburnum as its basis and known as Dioivurnia is unequalled. It improves digestion and tones the general system, but acts especially upon the uterus and its appendages. It restores tone to these organs, reduces pain and corrects those conditions which result in leucorrhœa, dysmenorrhœa, displacement and the like.

**Substitution.**

"We do not say that we have no laboratory, and that we fill prescriptions with medicines manufactured by pharmaceutical proprietary houses only. We simply say this: We have studied and qualified ourselves to be competent to compound any prescription just as the physician wishes."

The above has been sent out by a drug store in Portland. We do not know what it means, unless it is a notice that when antikamnia is ordered they put up something else which is made in their laboratory, or when Fairchild's essence of pepsine is prescribed they put up something which they compound themselves. It is first-rate advice to give to a doctor that if he finds that his druggist has a lot of bogus wares on his shelves, to change druggists. When a man orders Listerine he wants the product of the Lambert Pharmaceutical Company, and not some counterfeit which the druggist may shove off on his patients. If druggists do not cease this practice of substitution, it will not be more than four or five years when prescriptions will be a rarity in their stores.—Medical Sentinel.

**An Efficient Eliminant.**

Tongaline has been prescribed constantly by physicians during the last twenty years for the various forms of rheumatism, neuralgia, grippe, nervous headache, gout, sciatica and lumbago.

Every physician must be favorably impressed by the formula for Tongaline, and its record of remarkable cures has led many of them to declare it to be a specific for certain conditions.

The action of Tongaline is rapid and always beneficial. In the first place Tongaline banishes pain. This is the first thing essential for a cure, although it constitutes only a small part of the cure. The real cure follows when the poisonous waste materials which have caused the disease are separated and eliminated from the body by the stimulating effects of Tongaline upon the liver, the bowels, the kidneys and the pores.

The anodyne effects of Tongaline are not based upon morphine or opium, since it contains no narcotic.

All the ingredients are eliminative, and their action is so harmonious that the disease is corrected in many instances without the patient being aware of the action of the medicine which is followed by no disastrous or unpleasant sequelæ.

All the salicylic acid used in Tongaline is made in the laboratories of the proprietors from the natural oil of wintergreen.

**Sanmetto and Substitutes with the "Same Formulæ."**

I have used Sammetto in cases of catarrh of the bladder and enlargement of the prostate gland with great success. In fact I never saw anything so near a specific. Henceforth I will not be without Sanmetto. Saw-palmetto and Sanmetto substitutes with the "same formulæ" do not act nearly so well. I therefore with pleasure recommend Sanmetto to the medical profession.

J. L. SAMMONS, M. D.

Calis, W. Va.

**"Cholera Infantum."**

DAVID COLEMAN, M. D., Tottenville, L. I., reports the following case:

"On July 1st last, was called to attend a baby suffering from Cholera Infantum in advanced stage. I had little hope of saving the child; at once put it on teaspoonful doses of Glyco-Thymoline (Kress). It stopped the vomiting and corrected the bowels—a rapid recovery resulted."

Sept. 17th, 1898.

## LECTURES AND ADDRESSES.

## RECENT ADVANCE IN GYNÆCOLOGY.\*

BY C. A. STEWART, M. D.,

Duluth.

Ladies and Gentlemen:

As chairman of this section, I beg leave to present you with a brief synopsis of the advancement in this department of medical science together with the more important changes and modifications of opinion upon different subjects within its scope.

It could not reasonably be expected that the phenomenal rate of advancement in this specialty should continue in the same ratio that has prevailed for the past few years, nevertheless, the past year has been a period marked by decided progress; not so much perhaps in the way of new development as in a more perfect comprehension or, I might say, a crystallization of opinion in relation to some subjects that were debatable.

We notice improvement in operative technique together with the usual number of new operations or modifications of old ones. Improvement is also evident in the perfection and simplification of diagnostic methods, in the better appreciation of the ætiological factors in these conditions and in the interpretation of reflex phenomena and their effects, the intimate relation existing between the sexual organs and the nervous system being more fully recognized, and irritation manifested in other organs as a consequence of uterine or ovarian disease and conversely irritation of these organs as the sympathetic expression of disease elsewhere, are features which have been carefully studied and are better understood. The concurrence of factors other than the predominant pelvic disease in causing the illness of the patient is recognized, and a wider range of view is taken with the result of giving the gynæcologic influence its proper place and importance, and of extending the application of therapeutics to include such other measures as are required to cure the patient.

As an aid in pelvic diagnosis I note favorable mention of the Brandt-Duhrssen method, which, it is claimed, greatly facilitates bimanual examination. In this method the patient lies on the back with the thighs strongly flexed and both the pelvis and shoulders elevated, approximating the symphysis and sternum and thus relaxing the recti muscles. Personally I have found it of some advantage, but not to the extent of doing away

with the desirability of an anæsthetic as is claimed by the originators.

Considerable attention has been given to the study of movable or floating kidney, with reference to the frequency of its occurrence, the symptoms it produces and its influence upon the general economy; the conclusions thus far being to the effect that it is a condition met with frequently, that it occurs more often in women than in men—some say six times as often—and that the right kidney is the one most likely to be affected. A peculiar feature noted by one observer, who has had large opportunities to make examinations, was that in sixty per cent. of the cases in which a movable right kidney was found there was evidence of more or less disease of the appendix vermiformis. While he attempts no explanation, the frequent coexistence of the two conditions must be due to something more than mere coincidence, and I will suggest that the appendicular trouble results from the gastro-intestinal derangement which is so common a symptom in movable kidney. In addition to the symptoms of gastric and intestinal disorder the symptoms of floating kidney are pain in the back, dizziness, the sympathetic disturbances due to enteroptosis, and derangement of the circulation, such as palpitation, distension and throbbing of the abdominal aorta. Occasionally attacks of pain occur that have been termed crises which simulate gastralgia or renal or biliary colic so closely that diagnosis is very difficult if not at times impossible. There is generally great mental depression and often a condition of neurasthenia.

An important fact upon which more stress has been laid of late is that many chronic inflammatory or subinflammatory diseases, such as endometritis, which are so commonly associated with general systematic disturbance, are a result of general morbid condition rather than a cause of the general derangement or of their being coexistent; the practical deduction being that curative measures to be effective in these troubles should be directed primarily to the relief of the general condition and that topical measures should be depended upon to cure the local disease after the exciting cause has been removed or at least relieved.

One of the most common conditions which serves as an exciting cause of congestive or low inflammatory conditions is insufficient elimination of the products of tissue waste from the system; a condition often seen in people of full habit who indulge freely in the pleasures of the table and take little or no exercise, or, as this condition is commonly designated, the uric acid diathesis. In this class of cases uric acid, urea and other excretory products are formed in excess of

\*An address delivered before the Section of Gynæcology of the Minnesota State Medical Society, June 23, 1899.

the amount eliminated by the kidneys, and accumulating in the blood are vicariously carried off by the respiratory and gastro-intestinal tracts and by the other mucous membranes, but as they are formed more rapidly than they can be eliminated, even with all these different functions aiding in the process, they accumulate in the blood and are deposited in the tissues and, as they are irritating in their character, they excite various diseases of the skin and hyperæmias or even inflammations of the mucous membranes.

In this way many cases of catarrhal endometritis originate.

Constipation is another important factor in maintaining chronic inflammatory conditions of the pelvic organs by keeping up a condition of engorgement of the portal vein.

Anæmia is still another condition which acts as a predisposing cause, particularly in young people.

The treatment of retro-displacement of the uterus has, as heretofore, received a great deal of attention, more especially with reference to operative measures, which of course vary much in different cases owing to the varying causative factors and the resultant varieties of attending pathological conditions.

In considering the subject of retroversion as a whole, when we recall the number of uncomplicated cases that present no symptoms whatever, and which in many instances are discovered by accident, we are impressed with the thought that the discomfort may be due more to the associated conditions than to the displacement; while this is true at times it certainly is not true always; but the element of fact it contains is sufficient to make any plan of treatment include all the accompanying disorders to insure the cure of the patient.

Accepting this proposition as sound, the consensus of opinion regarding operative measures is to the effect that in retro-displacements without the formation of adhesions to maintain the false position the operation of shortening the round ligaments is steadily growing in favor, improvements in the technique having done away with what seems to have been the great objection to this operation in the past—the difficulty of finding the round ligament in the inguinal canal.

In retroversion with adhesions the results of inflammatory action, it is generally regarded as unsafe and unsurgical to attempt to free the adhesions by the sense of touch alone, and to be able to profit by the sense of sight the suprapubic incision is necessary; the adhesions then can be freed carefully and all bleeding controlled. This done the uterus can be retained in the most satisfactory position by ventro-fixation, or preferably, ventro-suspension as this procedure is easy of accomplishment after the adhesions are freed and it affords far less likelihood of recurrence of the displacement. The objection to this opera-

tion that the fixation is liable to excite complications in future pregnancies, is greatly lessened by the fact that the inflammatory conditions which caused the adhesions have, in the great majority of cases, resulted in so much disease of the uterine adnexa that future conception may be regarded as a very remote possibility. The various operations for the relief of retro-displacements through the vagina, kolpotomy, vagino-fixation, vesico-fixation, etc., while they receive favorable comment on account of their ingenuity, do not seem likely to be favored by being generally adopted.

In the operation of hysterectomy the advocates of the abdominal and vaginal methods seem to be arriving at more harmonious conclusions upon a basis which leaves a definite field for both operations, the abdominal method being considered best for inflammatory troubles, pus tubes and large fibroids, while the vagina is considered the better route for operation in cases of malignant disease. The reasons for these conclusions are obvious: friable pus tubes, adhesions and complications of like character that occur as a result of inflammatory action are more successfully managed when the field of operation is constantly exposed to the view of the operator, while in malignant disease adhesions from inflammation are not found; this makes the operation quite feasible when undertaken by the vagina and it is attended by much less shock, thus increasing the patient's prospects for recovery.

I have noticed of late that there is a much more general use of the normal salt solution as a means of combating the effects of hemorrhage and of the post-operative shock, and it now seems that it has taken first place among the measures used for combating these dread conditions.

This remedial measure is of great benefit to the gynæcological surgeon, as from the nature of his work he is so likely to encounter evidence of shock. Experience shows that better results are attained when the method known as hypodermoclysis is resorted to than when intravenous injection is used, presumably because when it is taken up from the cellular tissue by the lymphatics and finds its way into the blood through the medium of this system, it mixes with the blood in a more definite way and the proportions of the latter fluid are kept more uniform. It is also more in accord with physiological processes, and the supply necessary to maintain the circulation is susceptible of regulation by physiological demands.

The quest for a suture material that can be rendered absolutely sterile and that will become absorbed in a definite time continues: cat gut is still most generally used, but the fact remains that in spite of every antiseptic precaution and with every process of sterilization of this suture material we still sometimes get pus. For this rea-



son many surgeons are resorting to fine silk for their buried sutures and to silver wire or silk worm gut for their plastic operations.

Among other recent suggestions I note one that I regard as being of general interest: this is a proposition to overcome the effects of removal of the ovaries by transplantation of the segment of an ovary from another individual, the suggestion being based upon a series of experiments conducted upon animals, which are said to have been successful in so far as maintaining the functional activity of the transplanted segment is concerned. This apparently opens the way for a means of relief from very distressing phenomena, but the difficulty in procuring the desired segment when most wanted will, I fear, prove an obstacle to its general adoption; while another objection might be raised as to whether in case conception followed such a procedure it might not give rise to questions involving a mixed maternity that would prove embarrassing to solve.

Thanking you for your attention I will close.

## ORIGINAL ARTICLES.

### PERINEO-VAGINAL INCISIONS FOR THREATENED RUPTURE OF THE PERINEUM.\*

By L. A. FRITSCHÉ, M. D.,

New Ulm, Minn.

The history of vaginal incisions for threatened rupture of the perineum, so far as I have been able to determine, dates back to 1742, when Fielding Oulde, a man-midwife in Dublin, quotes the following in his treatise on midwifery: "It sometimes happens, though labor has succeeded so well, that the head of the child has made its way through the bones of the pelvis, that it cannot, however, come forward, by reason of the extraordinary constriction of the external orifice of the vagina; so that the head, after it passes the bones, thrusts the flesh and integuments before it, as if it were contained in a purse; in which condition, if it continues long, the labor will become dangerous, by the orifice of the womb contracting about the child's neck; wherefore, it must be dilated if possible by the fingers, and forced over the child's head. If this cannot be accomplished, there must be an incision made toward the anus with a pair of crooked probe-scissors, introducing one blade between the head and vagina as far as shall be thought necessary for the present purpose, and the business is done at one pinch, by which the whole body will easily come forth."

We next hear of Michaeli's recommending

incisions into the vagina to prevent lacerations of the perineum, but he found no followers.

Ritgen and Birnbaum made multiple incisions through the vulva, and later we find Eichelberg, Chailly, Honore, Lumpe, Chiari, Braun and Spaeth, Scanzoni and Schultze recommending two lateral incisions to which the name of episiotomy was given. These incisions are made at a point one-third the distance from the posterior commissure to the clitoris, and the length never exceeded from one to two centimetres.

In consulting Lusk on this subject I find that he says: "When, in the judgment of the physician, rupture of the perineum seems inevitable, he is justified in making lateral incisions through the vulva to relieve the strain upon the recto-vaginal septum. By it not only is the danger of deep laceration through the sphincter ani prevented, but, owing to their eligible position, the wounds themselves are capable of closing spontaneously; whereas, when laceration follows the raphe, the retraction of the transversus perinei muscles causes a gaping to take place which interferes with immediate union. As, however, every wounded surface is a source of danger in childbed, episiotomy should never be performed so long as hope exists of otherwise preserving the perineum. It is essentially the operation of young practitioners, the occasions for its employment diminishing in frequency with increasing experience. The chief resistance encountered by the head is not at the thin border of the vulva, but is furnished by a narrow ring situated half an inch above, and composed of the constrictor vaginæ, the transversus perinei and sometimes of levator ani muscles. Incisions should be made during a pain, when the ring becomes tense and rigid and is easily recognized with the finger. As it is not desirable that the head should be driven suddenly through the vulva during the act of operating, the time selected for performing episiotomy should be at the commencement or close of a contraction. The division of the rigid fibres may be accomplished by means of a probe-pointed bistoury, or a pair of angular scissors. So far as practicable, the incisions should be confined to the vagina, and should not exceed three-quarters of an inch anterior to the commissure and the section made from within outward. Care, however, should be taken at the same time to avoid severing the external skin, by drawing it as far back as possible." This completes our short history of episiotomy.

Twelve years ago Prof. Alfred Dührsse n. o Berlin, described perineo-vaginal incisions for the artificial dilatation of the lower third of the vagina, and to which he gave the name that is now the title of this paper.

These incisions, which I am going to describe, will find application:

\*Read in the Section of Obstetrics and Diseases of Children of the Minnesota State Medical Society, June 23, 1899.

First, in cases of cicatricial contraction following the ulcerative processes of syphilis and infectious diseases, and grave lacerations from previous parturition.

Second, in a rigid and narrow vagina and vulva in old primiparæ when delivery is imminent.

Third, in high forceps or version in primiparæ, when the resistance is too great and serious vaginal lacerations are threatened.

Fourth, in those rare cases where a spasm of the levator ani is an obstruction, and which cannot be overcome by anæsthesia.

Fifth, in narrowing of the pelvic outlet in the generally contracted, funnel-shaped and kyphotic pelves.

These are the main indications. The object of these incisions is to overcome the resistance of the muscular ring at the pelvic outlet, when encountered by the presenting part of the child, thereby preventing the threatened rupture of the perineum and other extensive lacerations of the vagina; and, even if no visible laceration occurs, a subvaginal laceration of the levator ani may take place with a resulting prolapse of the vaginal walls in the future.

In a normal vagina, and particularly in that of a primipara, the lower third offers the resistance to the presenting part of the child. This portion of the vaginal canal is narrower than the upper, as it is enclosed in the muscular ring of the levator ani muscle and lower down with the constrictor vaginæ. In a spontaneous delivery this resistance is gradually overcome as the head slowly descends, dilating the vagina and ring of the levator ani, and drawing out the perineum. However, if the head or breech is still high in the pelvis and labor should be completed, the gradual dilatation of the vagina is impossible, and the rapid bringing down of the presenting part will cause multiple grave lacerations and bruises of the vagina and perineum at best, or the child may be stillborn if the extraction is very tedious, or we may not succeed in delivering at all unless perforation is carried out.

The resistance offered by the vagina and perineum can be overcome without any danger to the patient by one or two perineo-vaginal incisions, which go through the constrictor vaginæ and deep into the levator ani muscle. The presenting part can now be easily drawn down and the lacerations thereby prevented.

The accompanying drawings represent dissections which I made ten years ago in order to study the effect of these incisions. I found that the same changes of the surface of the wounds took place on the dead subject as on the living. The retraction of the severed muscles make the wound surfaces very unsymmetrical, as the drawings will show.

Fig. 1 represents a lateral incision in episiotomy where the superficial fibres of the constrictor vaginæ are severed and the gaping of the wounds as shown in the figure is caused by the retraction of the muscular fibres.

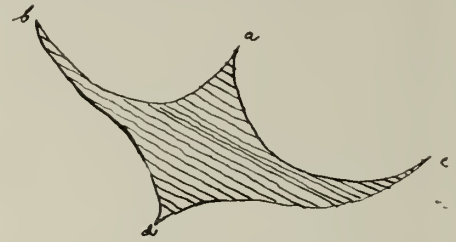


FIG. 1.—Outline of wound in Episiotomy.

Fig. 2 represents the single perineo-vaginal incision (right side) and is an irregular figure, caused by the upward retraction of the sphincter vaginæ, and the drawing of the perineum and rectum on the left side.

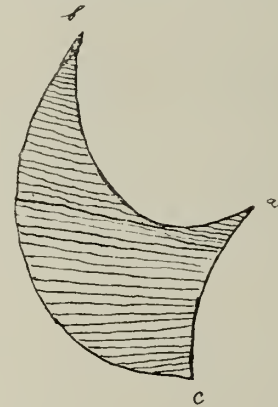


FIG. 2.—Perineo-vaginal incision. Outline of wound after right incision.

Fig. 3 represents the right incision after the double lateral perineo-vaginal incisions are made and is also a very unsymmetrical figure. The perineum and rectum sink back and cause great gaping of the vagina. With the double incision of the sphincter vaginæ the upper portion of this muscle retracts on both sides so much that it extends nearly to the mons veneris, and that point "b" which was originally at the frenula of the perineum reaches up to the mouth of the urethra. The lower portion of the sphincter retracts on both sides toward the raphe on the perineum and, owing to its intimate attachment to the levator ani, also backwards. The consequence of this muscular retraction is that the perineum loses in its breadth and height. The inner margin of the incision through the skin, which was originally three cm. is soon shortened to one cm., and the outer margin will be lengthened from two to three cm., so that point c will approach d, and point b will nearly reach the urethra. The cause of point c approaching d is found in the retraction of the muscular fibres in the perineum toward the middle line.

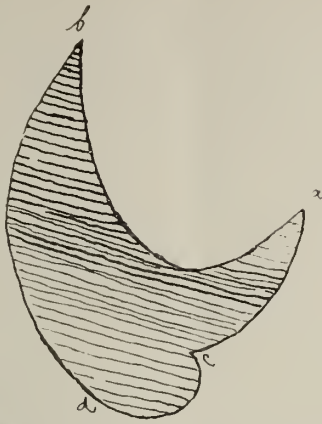


FIG. 3 - Outline of wounds after double incisions.

Fig. 4 shows the length and direction of the perineo-vaginal incisions on an anatomical preparation. The red dotted line represents the lengthened single incision in case only one is made. The red elliptical line indicates the extent of the dilatation of the pelvic outlet after the head is brought down.

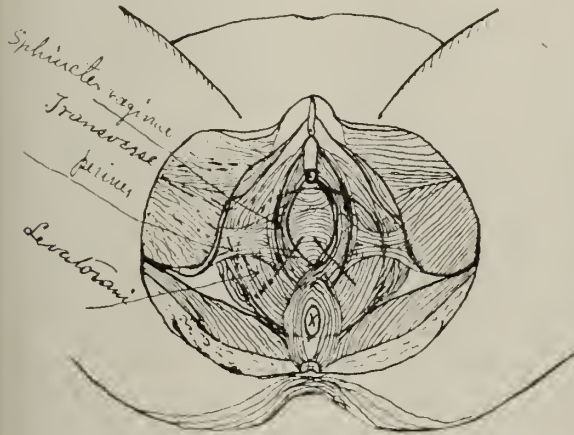


FIG. 4.—Diagram showing direction of incisions.

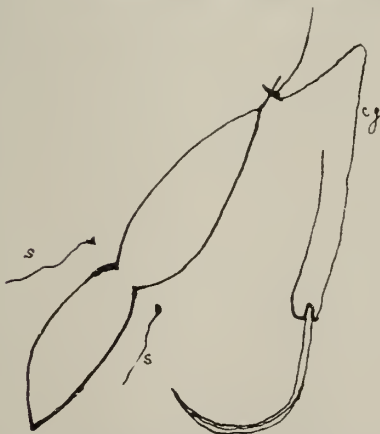


FIG. 5.—Outline of wound after ligature has been passed from point c to b, the upper half being in the vagina.

The technique of these incisions is as follows: With an angular scissors or a scalpel you cut into the introitus on one or both sides, either in the beginning or at the end of a labor pain, in the direction of a point midway between the rectum and the tubera ischii, keeping a little nearer to the latter. The scalpel is preferable to the scissors as it gives a smoother surface to wound. The length of the incision into the vagina is 4 cm., and the depth is given by the incision through the skin which is about 3 cm. In case only one is made and you still have difficulty in bringing down the head, the incision can be made deeper so that the wound through the skin may be even 5 or 6 cm. long. No attention need be given to the hemorrhage as the head is immediately brought down by the forceps, and will act as a tampon, and later the shoulders and body will do likewise. I have never had occasion to apply hæmostatic forceps and if it became necessary to staunch the bleeding, a provisional gauze tampon was sufficient until the removal of the placenta; after its removal, further bleeding will be arrested by the sutures which bring the wound surfaces in apposition.

In consequence of the retraction of the several muscles the contour of the wounds is changed as is shown in the drawings, and some care is necessary to approximate the surface properly. The margins of the wound have to be brought in apposition exactly as they were at the point of insertion of the knife when the skin incision is made, which would be points c and b in figures 2 and 3. If this is not done you will be responsible for any mishaps, which may be an elongation of the vulva or an artificial drawing out of the posterior vaginal wall, etc.

Armed with a silk ligature, a long curved needle is introduced at point c, which lies at the frenulum of the perineum, and carried under the whole surface of the wound and brought out at point b; if the needle does not permit this, bring the same out half way and reintroduce at the point of exit and then out at point b. This is followed with a catgut suture passed through the apex of the wound in the vagina and now we have figure 5 in the drawings. The wound on the other side is brought together in a like manner. At this stage there is very little gaping of the wounds left; the longer portion being in the vagina, and the shorter on the skin. The wound in the vagina is now closed with running catgut sutures which must be carried through under the whole surface of the wound. When the silk ligature is reached the same is tied and then it usually suffices to pass a few more silk ligatures through the shorter perineal wound. The opposite side is disposed of in the same way.

Iodoform or boric acid is dusted on the parts and a small strip of iodoform gauze is introduced

into the vagina and also made to cover the outer part of the wound. Later a dressing of gauze, which is soaked in a 1 to 3000 sublimate solution is of service.

When the wounds are stitched the patient is placed best on the cross-bed. Careful disinfection of the genitals, hands and instruments is a requisite and, if this be conscientiously done, the danger of infection is nil. The patient must be kept on her back for twelve or fourteen days. If from careless rising the first few days or other cause the wounds should rupture, secondary sutures with freshening of the surface of the wound should be applied after two weeks. The rule is that you will have union by first intention and a solid perineal body.

Whenever these incisions are demanded in cases where there is no narrowing of the bony outlet and the resistance is wholly from the soft structures, it is advisable to try a single one at first and carry the same deep into the levator ani as indicated in figure 4; and if the obstruction to the traction on the forceps is not overcome, the second one is made. However, in many cases you will succeed with only one.

The scars are very insignificant, and only once in a while you will have a small triangular gaping of the vagina, about the size of the tip of your small finger, following the double incisions, but otherwise a solid perineum.

I have not had occasion to carry out these incisions twice on the same patient, but I should not hesitate to do so if they were indicated. Subsequent deliveries passed off without any mechanical interference except the forceps or version.

Lusk in speaking of episiotomy says "it is essentially the operation of young practitioners, the occasions for its employment diminishing with increasing experience." I quite agree with this eminent teacher of obstetrics that with increasing experience you will have fewer lacerations of the perineum, and that this will hold true where the pelvis has normal dimensions, but unfortunately we are doomed to meet patients where the dimensions of the pelvic diameters are not normal, and where we are compelled to consider radical measures for the safety of the mother as well as of the child. Many a practitioner has applied the forceps and, when the head would not progress after the most brutal tractions, proceeded to perforate the skull; and I have seen the most terrible lacerations and sepsis follow after the delivery was accomplished. In either case I am convinced that the same could have been avoided if these incisions had been carried out. As heartless as it may seem to mutilate the vagina for the time being, it is not so brutal as when you see one who pretends to be an obstetrician bracing one or both feet against the bedside to terminate labor.

In summing up we find that these incisions are indicated: First, in stenosis of the vagina from the causes already mentioned.

Second, in rigidity of the muscular structures of the pelvic outlet in old primipara.

Third, in the high forceps or version in primipara, when the presenting part has not had time to dilate the muscular ring of the pelvic outlet and delivery is demanded.

Fourth, in the occipito-posterior positions, when the occiput rotates into the sacral cavity.

Fifth, in narrowing of the pelvic outlet, which we have in the generally contracted, funnel shaped, or kyphotic pelvis, and when the transverse diameter is not narrower than 8 cm.

I have found that the greatest value of these incisions is in the latter class, where we have not only the resistance of the soft parts to contend with but the bony structures as well.

It will make this paper too lengthy to recapitulate the cases and the pelvic anomalies met with in my twelve years' experience as an obstetrician, but I do not hesitate in commending Duhessen's perineo-vaginal incisions in the above mentioned indications.

#### OBSERVATIONS ON INGUINAL HERNIA.\*

BY H. L. STAPLES, M. D.,

Minneapolis.

Although hernia has been treated in an operative manner since the days of Celsus, yet as late as 1890, Dr. Bull, of New York, stated that as long as a truss could be worn with comparative comfort no operation was justifiable, as relapses ranging from forty to fifty per cent, were the ultimate results by the best known methods.

The report of the London Truss Company, issued recently, showed relapses in 242 operated patients, who had applied for relief during the last six years. Soon after the statement of Dr. Bull came the announcements of Bassini, of Padua, and Halstead, of Baltimore, claiming permanency of results in about ninety per cent, of operated cases with a mortality of practically nothing, by a new method of canal obliteration.

The chief points in their operations are identical, namely, the obliteration of the inguinal canal and transplantation of the spermatic cord, forming a new route for the cord to reach the scrotum. Bassini closes the opening between the pillars and then stitches the aponeurosis of the external oblique muscle over the cord, while Halstead unites all the structures and covers the cord with skin only. There is practically but little difference in the results, and for the last three years I have followed the plan of Halstead with slight modifications.

Most of my work has been done at the homes

\*Read in the Section of Surgery of the Minnesota State Medical Society, June 22, 1899.

of the patients, as the consent is more readily obtained, expense is lessened, and the three or four weeks in bed absolutely essential to success is more pleasantly passed. After that period active work should be resumed slowly, as the full resisting power of the structures is not acquired for a long time.

The pubes and scrotum are shaved, the skin washed with soap and water, dissolving adherent fatty particles with ether or turpentine, douching with bichloride solution and finally hardening the skin with alcohol completes the preparation; not omitting a free calomel purgation the day prior as a bowel disinfectant. Poulting for hours and rough scrubbing brushes are harmful, affording by the slight skin lesions thus caused a ready entrance to the staphylococcus pyogenes albus and other bacteria.

The incision is as short as possible, nearly over and parallel with Poupart's ligament, following as nearly as possible the skin creases as a track of least tension.

The aponeurosis is divided to a point just above the internal ring, the sac and cord are elevated and separated by careful blunt dissection. The cord is then freed from adhesions and its connection with the cremasteric fibres. While attending Gussenbauer's clinic I observed that the sac was carefully opened to free it from any of the abdominal contents, then separated from its attachments where it emerges from the abdomen and twisted quite firmly. The cord thus formed was transfixed and securely tied both ways.

I do not believe the peritoneum offers much resistance to the pressure of an impending hernia, but by thus twisting the sac the danger of hemorrhage is lessened and the hernial fossa or infundibulum is obliterated, the elasticity of the peritoneum causing it to retract without depression. The sac stump and peritoneal thickening may be of some value, as was argued by the operator. The infundibular process does not exist in the normal subject and only occurs where there is an imperfect development of the structures about the internal ring.

The spermatic cord must be carefully handled or a certain amount of inflammation will result. It is not necessary to excise the accompanying veins unless very large. If the edge of the muscle at the internal ring is thin, it can be incised and the cord carried farther out, as Halstead recommends.

For the closure of the opening I have always employed kangaroo tendon, and believe it is the ideal suture in this situation. It will remain unabsorbed two or three months and then be replaced by fibrous material, thus aiding in the consolidation, as in a case examined by Bull one year after operation. The best tendon is that prepared by Van Horn, who kindly gave me his process. It is taken from the tail of the freshly

killed animal, sun dried, and imported in that state. It is treated with an ether bath, disinfected with eunol and boiled in absolute alcohol under pressure. Dr. Coley recently informed me that he had used this in five hundred hernias with over ninety-six per cent. of primary unions.

Most of the so-called kangaroo tendon on the market is derived from domestic animals, is poorly prepared and the cause of many failures.

Silk has been rightly abandoned. Silver wire is better, but occasionally has to be removed on account of pain caused or suppuration.

Cat gut is not sufficiently lasting in all cases, and when treated by dry heat alone often contains spores or bacteria. According to a recent German report twenty-nine specimens were infected out of 107 examined. "Cat gut" is derived from the intestine of the sheep, and no matter how prepared, is not to be compared for strength, durability or sterility with the kangaroo tendon.

The mattress suture is best, as it causes a broad approximation of opposing surfaces, and it should be tied on the outer or lower side. Sometimes failure occurs by not introducing a sufficient number of sutures. A large, round, full curved needle may be employed, or a Peaslee's. The conjoined tendon is thus united to the inner aspect of Poupart's ligament, and where the tendon is small the external border of the rectus muscle may be included. In all cases, more of the tendon should be included than of the ligament below. Probably the most powerful agent in resisting the tendency to hernial protrusion is the transversalis fascia, and much depends upon the proper union of this structure. It may be necessary to constrict the tissues somewhat at the inner angle of the opening, and this can be done with safety much better than to make relaxation cuts. It is important to stop all bleeding, as a hæmatoma may prevent primary union. The cord is now placed over the line of sutures and the skin closed over it. The patient is kept in bed three or four weeks according to the size of the hernia.

A method of curing hernia "without detention from business" is practised to quite an extent by the quacks. It consists of the injection of a weak solution of cantharides, or sulphate of zinc and carbolic acid into the canal, hoping to obliterate it by the subsequent inflammatory reaction. That this procedure will occasionally cure small hernias cannot be denied, but it is unsurgical and unsafe. Two deaths have occurred in this city to my knowledge, and nearly all such treated cases have relapsed after a greater or less length of time.

Nelaton, of Paris, has diverted the cord into a hole made through the pubic bone, and Fowler, of Brooklyn, has transplanted the cord into the peritoneal cavity from the internal ring to a point below the level of the pubic bone. These expe-

dients are complicated and unnecessary. In monorchids, the testicle may after a time become partially descended with a hernia complicating.

A truss is often exceedingly painful in these cases, frequently causing inflammation of the gland.

In the two cases which have come to my notice I endeavored to dissect the vas and other vessels from the testicle and stitch the inverted gland to the scrotum. Not being able to do this satisfactorily, I have excised the testicle. Examination showed the semeniferous tubules in a fibrous, thickened condition and devoid of spermatozooids; so excision is the best plan, the testicle being useless except for ornamental purposes.

In case the sac contains omentum, this should be freed from all adhesions at the internal ring, on account of danger of intestinal obstruction, as mentioned by Treves, or the stump may act as a wedge and cause a recurrence. The omentum is spread out as thin as possible and tied off with multiple ligatures. De Garmo thinks the dusting of the stump with aristol forms a film over the cut edges and prevents adhesions.

Cocaine has been employed with success where a contraindication to a general anæsthetic exists. It is wrong to operate on very large hernias, especially if irreducible, or on old people, particularly if obese. I have seen several executions in such cases. Bladder wounds may occur, the walls of that viscus being so thickened and altered as to become difficult of recognition.

Children under five or six years almost invariably get well by wearing a truss; over that age, if a well fitting truss fails to cure in a year or two, it is better to operate.

The general practitioner, when obliged to operate for strangulated hernia, is usually so glad to get the protrusion back that he thinks his whole duty performed by a hasty closure of the incision.

The technique of a radical cure is so easily acquired that he should not be satisfied until he has made an effort to accomplish this. I had hoped to report twenty cases without a relapse, but one of my cases has recurred after remaining well two years.

### THE POLICY OF STATE SANITARIUMS FOR CONSUMPTIVES.\*

By R. M. PHELPS, M. D.,

Assistant Superintendent Rochester State Hospital,  
Rochester, Minn.

The purpose of this brief consideration of the question is to present a non-partisan view of the subject, one which does not push into undue

prominence any especial plan. We would present considerations upon both sides of the subject, and lead toward an opinion formed by the balancing of the arguments of the two sides. The immediate occasion for the consideration of this question is found in the fact that in several states during the winter this idea was advocated in the public press. We presume it to be one which will in the future come up for legislative decision. The form of plan usually advanced consists in the selection of some place in the state having the best climatic and hygienic conditions, and the construction there of a building, to be furnished with a staff of officers who shall receive and care for patients from all over the state.

We can divide this question into three subordinate ones:

First: Is it best to have any sanitarium?

Second: Should the state equip and conduct such a sanitarium?

Third: Should such a sanitarium be located within the borders of the state?

The first question: Is it best to have any sanitarium? is not so easily answered as would at first appear. The present very considerable agitation concerning the danger of infection from consumptives, going so far recently as to consider the distance at which coughing can carry the bacilli, and the danger from bacilli to be found upon the hands of consumptives, together with the very industrious promulgation of such views in the public press, is not only making it hard for consumptives to get quarters in private houses, but on the other hand, very hard, depressing and disheartening for consumptives in the early stages to go into such a grouping of consumptives as are usually found in sanitariums. Sober second thought seems to assure us that we have had centuries of experience to show just how contagious consumption is, and that it is not reasonable to suppose it to be more contagious, now that we know something of the method of its contagion, than it was before. Moreover, that it is still somewhat debatable as to how contagious consumption really is. Many of us have been accustomed to think of the soil, rather than the seed, as the most prominent and easily studied element. Actual authenticated cases of direct contagion seem rare. In a hospital, like the State Hospital at Rochester, with ten to twenty-five deaths from consumption each year, with patients such as usually make no hygienic effort themselves, and who are in very close contact with nurses and other patients, specific contagion from one case to another is practically unproven. Yet there is probably no set of circumstances anywhere more favorable to contagion. On the other hand, the confining life for nurses and patients, the lack of hygienic effort and activity among the insane, show quite dis-

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tinctly in causation toward either general ill-health or toward the especial disease, consumption. If a patient becomes melancholy, sits in a quiet and dull way in a corner, shoulders bent, head down, we begin to fear consumption for him at once.

Hospitals for consumptives are said to report likewise, although I have no personal testimony from them. Still further, there are probably two hundred thousand homes in the United States, each having a consumptive patient freely moving about all the time, and until the past very few years, without any especial effort to prevent contagion. The families in which these consumptives lived, moreover, were many of them supposedly of like consumptive tendencies. If ever contagion had a chance to show its power, it is here. Yet instances of direct contagion are very rare, and those mentioned are not by any means always certain.

But whatever the judgment as to the facts may be, the dread of the disease has been spread about, and cannot be readily checked. The disease is to a certain extent shunned and outcast, as is found upon traveling and trying to find place for consumptive patients. As a consequence, the patient told that his lungs are weak and in danger, will come to dread going in among a collection of consumptive patients, many of them having gross and repulsive symptoms. The logical outcome of this is the attempt of every consumptive to get away from every other, at least every other who has marked physical symptoms. This is actually the prevailing effort at present. In Arizona a sanitarium is being planned in which a large number of very small cottages are to be spread over an area of six hundred acres, separated by drives, and screened from each other by trees.

But how shall we answer our question? Necessity in the shape of poverty tries to answer it for us. At least nine out of every ten consumptives cannot afford any such isolation as above outlined. No disease is more costly to care for in a desirable way. For those who are most poor, and in most unhygienic surroundings, especially in the cities, a sanitarium properly adjusted as to climate and with vigorous hygienic efforts, would afford a much better chance to those who are least able to care for themselves. Moreover, to those who believe in infection, there would be a removal of the focus of infection from the rest of the family at home. We would then incline to answer our first question in the affirmative. A sanitarium would be of great value to the poorer classes of the people.

Some modifying thoughts come in here. The main hope for a cure is in the very early stages, but even among those financially able the disease often has called forth no extreme or active effort until well into the middle stage. People cling

to their occupations, their homes and their families until stern necessity compels them to change. If this is true among the well-to-do, from among the poor, would not the sanitarium be crowded almost wholly by those in the later stages? We think it probably would. Any question as to the numbers who would appropriately go to such a sanitarium, is rather speculative. Doubtless there would never be any lack of patients.

The second question is, Is it the function of the state to afford such sanitarium accommodations? The state has taken upon its shoulders the care of the deaf and dumb because of their long standing helplessness and lack of earning power. It cares for the blind for like reasons, also for the insane. These people are too heavy burdens for private persons to care for. The epileptics, imbeciles and feeble-minded are also cared for in this way. The criminals and reform school inmates are cared for for its own safety. Moreover cities and counties take up the care of the bodily sick quite generously in their hospitals, and the movement toward the providing free hospitals, dispensaries and like charities has grown so rapidly of late as to call forth vigorous protests from the medical profession. If now we take up the cure of consumptives, we take up one which promises to outweigh every other in expense and trouble. The plea that we secure greater public safety by so doing seems the most legitimate one to offer. Aside from this reason, if the care is given freely, it is purely a charity, and trends toward the public care of all diseases.

If a charge were made upon the patient just sufficient to pay the current expenses of the institution, it would place the scheme on a different basis, but would exclude large numbers of the poorer classes.

The third question is as to where such sanitariums should be located. The natural pride, and the self interest in each state would cause it to be located within its own borders. A state would be apt not to take so much pride or interest in one located at a distance—yet by all consensus of opinion, some climates are better than others. In fact, by a great consensus of medical opinion there is no such marked effect produced by any other agent as by the selection of a suitable climate. For the Northern states, and those having the more harsh, changeable and damp climates, this becomes at once a disturbing factor in the consideration of the question. Still more trouble is introduced by the fact that some of the most nearly ideal climates for winter are not the very best for summer. Incidentally, it is to be mentioned also that the best climates tend to be found in a desert and unproductive country.

I would then leave the question open for debate. I might add, however, that in studying for an ideal plan, that particular ideal which pictures the half-colony form of gathering together,

located in some good climate, where out of the soil and from the usual side occupations, one can, as is quite essential, earn a living and keep the family together, has always been the most attractive to me. Of course difficulties are in the way of such a scheme, but after all the main difficulty is that seemingly little one of securing a consensus of effort and opinion among those interested. It is necessary that some person or persons start such a colony and advertise it. Those who are sick cannot probably get together into any combined effort. If some work were offered, however, patients would leave home in the earlier and more hopeful stage of the trouble. The way in which this would be made to join our subject lies in the fact that the state, or a combination of states, could initiate such a colony plan, which might have, or might not have, accordingly as would seem best, sanitarium buildings in connection with it.

#### CARE OF THE NEW BORN.\*

BY HELEN W. BISSELL, M. D.,

St. Paul.

I present this entirely practical paper by request and so let none be disappointed at lack of statistics and exact measurements, for they have been purposely set aside.



The human child comes into the world one of the most helpless of new born creatures, and it is exceedingly fortunate for the race, that as a rule, it has a vigorous voice, for that alone saves it from carelessness or unintentional neglect. After the first strong cry with which it expands its lungs and lays claim to its place in the world, we are willing, as a rule, that it should become quiet and remain an unobtrusive member of the family. The methods which I advocate all tend in that direction, and I will frankly state at the

outset that I am much inclined to old-fashioned ways and the belief that it is too often interfered with by modern methods called scientific. As they are founded on the treatment of between 500 and 600 babies they may be worth consideration.

Immediately after birth, the mouth should be cleansed with soft linen wet with plain water and the face around the eyes treated in the same manner. Under ordinary circumstances, either in a hospital, or outside, it is better not to put anything into the eyes themselves. If there is any symptom of trouble it is time to begin.



I usually tie the cord about one inch from the body, first stripping it if there is a large amount of gelatine around the vessels, I have used all kinds of ligatures from freshly sterilized silk to the commonest kind of string, and never had any trouble therefrom, and all varieties of dressings, though bismuth subnitrate in abundance together with absorbent cotton seems on the whole most desirable. This dessicates the cord rapidly and frequently does not need to be changed, but drops off with the cord.

I believe that great injury is done children by leaving them exposed too long at first, as the great change of temperature added to the moist skin is an element of danger in every case. For that reason I always want a well warmed flannel blanket, or soft cotton comfortable to receive the baby, and it is pleasant to notice how soon the most vociferous youngster quiets down under these circumstances; then if the child is quietly laid away with a hot water bottle just near enough to add a gentle warmth, it is seldom heard from again until the mother has been properly cared for. This attention to warmth is particularly necessary if the baby is at all feeble, or the labor prolonged and there has been difficulty in establishing respiration. Under these circumstances a hot bath conjoined with artificial respiration or keeping the body wrapped in hot blankets is of the utmost importance. I have often wondered how children lived who were subjected to various energetic manipulations while they were becoming more chilled every moment. There is no doubt but that various catarrhal conditions and even pneumonia itself have been induced by such measures. If the necessity for warmth is insisted on, there is always danger of overdoing the matter. Children covered with

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perspiration are in danger from every draft, especially as they are generally uncovered too rapidly and the clothing not changed.

A very delicate baby should not be bathed for several days but carefully oiled and wrapped in cotton batting. I have seen children who had not been washed for weeks, and their clear and rosy skins showed that oil can be an invaluable substitute for the ordinary bath of soap and water.

Fortunately the modern dress is tending in the direction of simplicity and common sense. A light abdominal bandage is the best, knitted and therefore elastic, with one high necked and long sleeved flannel skirt with a corresponding white cotton dress outside. In very cold weather it may be necessary to use a second flannel skirt, high necked and sleeveless. Socks are better for the feet than a pinned skirt.

### A REPORT OF A FATAL CASE OF EMBOLISM WITH AUTOPSY.\*

By W. T. ADAMS, M. D.

Elgin, Minn.

S., an 18 months old child. Generally in good health, though always of light complexion and delicate in appearance, complained of a lame ankle on May first, 1899, and began to be feverish and show signs of indisposition. I saw the case May second; found some fever and a disposition to complain if handled, and inspection revealed the right ankle slightly swollen, giving it the appearance, as the parents supposed, of a sprained ankle, though no history of injury was to be had. There was slight discoloration as if bruised under the internal malleolus.

May 3, the child was brought to my office. Temperature was 102 degrees, pulse very rapid. There was a condition of marked uneasiness, with considerable muscular twitching suggestive of slight spasms. The swelling and discoloration about the ankle was considerably increased. I gave an anæsthetic and carefully examined the ankle, fearing that I had overlooked some severe injury, only with negative results. The leg was swollen to the knee. Toes were cold but the foot was hot.

May 4. Temperature 103.5°. Constitutional disturbance more marked. The foot had turned black to the ankle, with positive signs of gangrene, but no line of demarcation.



May 5. General increase of grave symptoms. Spasms frequent during the night and continue today. Considerable increase of discolored area, and swelling of ankle and limb to knee, and general capillary stasis.

May 6. Temperature 105°; pulse too rapid to count. Spasms continue at intervals during the day. Expired at 4 o'clock p. m.

I made an autopsy of the affected limb and found most of the blood vessels below the knee to contain fragmentary blood clots. The popliteal artery was completely filled with a hard, fibrous embolism throughout its entire length. In deference to the wishes of the family I then discontinued the examination. The femoral artery was not filled with embolism.

As to the true etiology of the case I am at a loss to know, but from the early appearance of grave constitutional symptoms, I am of the opinion that some toxic agent in the blood caused a general disturbance of the intima of the blood vessels, perhaps a general arteritis, which caused the embolism. I could detect no evidence of endocarditis.

As to treatment, correctives were given for the stomach and bowels and for relieving fever. The matter of amputation of the limb was considered, but there was no time when, on account of grave constitutional conditions is seemed to be justified.

Murrell says that Aqua Tofana, the celebrated Italian poison, was made by rubbing white arsenic into pork, and collecting the liquid which drained from it during decomposition. To an irritant mineral poison was therefore added, by this vile process, a ptomaine or cadaveric alkaloid possessing properties of the highest degree of toxicity. Be this as it may, there is well-grounded belief that corrosive sublimate and opium were sometimes added to the arsenic.

\*Read before the Southern Minnesota Medical Association, August 3, 1899.

### NEUROMA OF THE MEDIAN: REMOVAL AND RESTORATION OF FUNCTION.\*

By A. W. DUNNING, M. D.,  
St. Paul.

The following case I report, not as a great rarity, but because, simple though it may seem, yet it presents some very useful and instructive points that may be noted.

The patient, Mrs. J——, Scandinavian, æt. 36, was referred to me in April, 1899, by Dr. Chas. Artz, of this city, and at that time gave the following history: On June 16, 1898, while opening a mason jar with a wrench, the jar broke and she received a severe wound from the glass on the left wrist. It was about one and one-fourth inches in length, and extended diagonally upward and inward above the upper border of the annular ligament. The wound was quite deep and bled very profusely.

It was treated by simple skin suture and compression without other attempt to unite the parts below. Primary union was not secured and the wound healed slowly but completely by granulation, a considerable cicatrix resulting. Immediately following the accident the patient complained of loss of feeling in the hand but it was thought this would speedily be restored. Instead, however, it grew worse and when in April, 1899, I saw her for the first time the case presented the following conditions: There was marked flattening of the thenar eminence from atrophy of the abductor, opponens and flexor brevis pollicis muscles; other muscles of the radial side of the palm and the first and second digits were atrophied also but in less degree. There was marked analgesia and anæsthesia throughout the cutaneous distribution of the median and there was a tendency to cracking of the skin. There were at that time two ulcers on the sides of the fingers which refused to heal. Temperature sense was very much obtunded and burns were received upon the fingers sufficient to destroy the skin without being recognized by the sensation. The power of the hand was greatly impaired, the dynamometer recording less than half that of the right hand. There was a good deal of pain in the hand, especially at the seat of the cicatrix.

Diagnosis was made as neuroma of the proximal end of the divided median nerve. I advised its removal by operation with an attempt to proximate and unite by suture the ends of the nerve. This was accepted and I accordingly made the operation, assisted by Dr. Artz, at Bethesda Hospital, April 16, 1899. Upon laying open the field by a free longitudinal incision along the course of the nerve a considerable mass of cicatricial tissue was encountered, and in its midst the bulbous enlargement of the proximal extremity of the nerve. This was dissected out and removed with comparative ease; but

when it came to securing the distal end of the nerve it was far more difficult. It was finally done however, though it was so atrophied as to be difficult of recognition, also to separate from the cicatricial mass. Finally, however, I succeeded in separating out its sheath, and by stretching the upper portion of the nerve and flexing the wrist was enabled to suture the ends together. This was done with three silkworm gut sutures passed through the sheath and nerve substance and their ends left protruding through the skin opening. After removing as much as possible of the cicatricial tissue the incision was closed with a continuous suture.

Primary union took place except at the point where the silkworm-gut sutures protruded. These came away in two weeks. The tumor after removal was about the size of a medium sized cranberry (seven-sixteenths of an inch in diameter), and upon section and microscopical examination was found to be made up of a fibrous growth upon the side of the nerve; the true nerve elements being entirely to one side of the mass.

The result of the operation was complete relief from pain, gradual but almost complete restoration of sensation, and a gradual rounding out of the atrophied muscles with increase in their power. At the time of my last examination, June 13, the thenar eminence was still somewhat flattened and she complained of a slight degree of numbness, but the ulcers were entirely healed, the skin soft and healthy, and the hand otherwise normal. Tested by the dynamometer the left hand registered 46 as against 54 in the right, a difference scarcely more than normal.

From the foregoing it seems to me that surgeons should be very careful, even in minor injuries to see to it that all divided nerves of any considerable size are brought together and secured by suture. In these days of aseptic surgery and of absorbable suture, this feature should never be neglected. We are prone to think that nerves are indefinite, friable things, incapable of successful surgical manipulation, but this is not true. It has been demonstrated that the sciatic nerve of man, within its sheath, will sustain a weight of considerably more than two hundred pounds, and that other nerves are equally strong in proportion to their size. They are also quite elastic and less difficulty is experienced in approximating their divided ends than might be supposed. At any rate the attempt should always be made, and when from loss of substance approximation is impossible, the ingrafting of nerve tissue from elsewhere should be considered.

The above case also demonstrates that while the late operation may be done with comparative success, yet because of the tendency to atrophy of the distal end of the divided nerve, and the resulting difficulty in finding and securing it, the immediate operation is far more desirable.

\*Read in the Section of Nervous Diseases of the Minnesota State Medical Society, June 21, 1899.

## THE PART OF THE OPERATING ROOM IN MODERN SURGERY.\*

By FRANKLIN STAPLES, M. D.,

Winona, Minn.

The modern hospital operating room, with its various belongings, has come to have importance as a school of instruction, as well as a necessary provision for good surgical work. The student and practitioner are here afforded object lessons, not elsewhere as well taken, showing the essentials of the present advanced practice in both general and special departments of surgery. The number of these essentials for all kinds of surgical work is known to be somewhat large. A list of the more important may be given as follows: A clean room, with hard polished floor, walls and ceilings, (glazed tile serves well for floor and for a part of the walls); no dust retaining surfaces in room or on furnishings; glass or metal furniture, cases, vessels and apparatus, all of which are unharmed by hot water or dry heat sterilization; sterilizing apparatus, sterilized instruments, and aseptic material; a supply of pure water, with heat, light, and ventilation sufficient and adjustable; surgeons for operators who are the embodiment of cleanliness, and who demand such in all the surroundings, and whose good work comes from the cultivation and experience of both head and hands. Add to these the corps of assistants and nurses, educated and found competent in the details of surgical asepticism and care, and you have both the school and the workshop of modern, advanced surgery. The contrast between the present condition of this part of the modern hospital and that of early times, is deserving of notice.

An account of even the leading facts concerning what was and what is, in the practice of surgery, would make an important chapter in the history of the advance in recent years. One or two may be given as illustrative:

**A Century of Progress.**—The story of events in the development of the modern hospital, as it is seen in the retrospect, is not without interest. It is known that in the latter part of the eighteenth century a new interest in hospitals arose in leading European countries, which led to a reform movement for the removal of certain evils that were found to exist. The account is that great crowding of charity hospitals and the want of sanitation were the principal grounds of complaint. The condition of the Hôtel Dieu in Paris is given as illustrative; but for certain reasons the case of this institution may have been an extreme one. It is said that the laws forbade the hospital authorities to refuse admission to anyone. The condition from overcrowding has

been described by a distinguished writer in words as follows: "The spectacle was to be seen there of two or three smallpox patients, or several surgical cases, or sometimes even four parturient women lying in one bed." It is unnecessary to speak of the small amount of air space assigned to one patient, or of the general want of sanitation existing here and in all similar institutions at this time. A knowledge of germ infection, and of prevention by sanitation, were then quite unknown, and hospitals suffered for want of the advantages since enjoyed because of the advance of practical knowledge of this kind. It is known that the hospital death rate was much greater than it was among the sick and injured who were treated outside.

From this state of things, existing near the close of the last century up to the better condition of the present time, progress has been made, but with varying degrees of rapidity. The first half of the present century may be credited with extension and preparation work; it remained, however, for the latter part of the period to witness the phenomenal advances, the results of which now appear as the distinguishing features of modern medicine and surgery. What has come from discoveries and developments in the science of bacteriology deserves first mention. The summary of good results of work based upon this may be stated as follows: The field of practical surgery has been enlarged; the danger to life from surgical diseases and operative measures has been wonderfully lessened, and the death rate accordingly diminished; while to the living more complete recoveries have not only tended to prolong life, but to render its continuance more desirable.

**Professional and Public Opinion at the Present Time.**—While the modern hospital, with all its means and appliances, has the general favor both of the profession and the people, there are those even at the present time, who have but partially come to a full appreciation of its advantages. To what extent the apparent reluctance on the part of some people to resort to the hospital for surgical treatment, is a result of what is known of the faulty conditions of these institutions in former times and the necessarily unfortunate results of the surgery then practiced, may not well be determined; but it is true that the number of those who may be thus affected is rapidly diminishing. It can hardly be otherwise, since the light of present knowledge concerning improved sanitary conditions, greater safety and comfort, is showing to all classes the favorable contrast between what belongs to the present hospital and to that of the past. The fact that the modern hospital has come into general favor with the people, and receives a liberal support from the same, speaks well for both the beneficiary and benefactor. Of

\*Read in the Section of Surgery of the Minnesota State Medical Society at the Annual Meeting, June 22, 1899.

the former it tells of the condition of merit and a worthiness of support; of the latter it shows the existence of an enlightened understanding of the same. This, of itself, is sufficient guarantee of its permanence and of its future increased usefulness.

Aids to Progress, as Found in Recent Discoveries and Developments in Science.—Bacteriology.—It is now freely admitted by all who have been at all familiar with the progress of events, that the newly developed science of bacteriology, with all its belongings, has had a greater importance than any other factor, and possibly more than all others combined, in the progress of medicine and surgery during the century which is now about to close. The knowledge of living germs as disease causes, of their part in the pathology in surgical diseases, of the danger of their existence in ordinary dwellings, and the chances of infection, especially in surgical operations, has afforded instruction concerning the essentials of the hospital, and has made the operating room what it now is.

The Part of Anæsthesia.—A most important advance in operative surgery was made at about the middle of the present century, as a result of the discovery of anæsthesia. It is remembered when the skill of a surgeon was rated largely according to his ability to operate quickly. Advancing opinion at length found expression in the words of the following adage: "If, when 'twere done, 'twere well done, then 'twere well 'twere done quickly." The practical truth of this maxim can hardly be denied at any time. Progress in modern science, however, has rendered other features in operative surgery more important than rapidity of action. Thus the advent of anæsthesia made more deliberate and more carefully performed operations possible, and a practical knowledge of the use of modern asepsis and of the necessary temperature of air and of all material in the operating room has increased the safety of capital operations, and has afforded improvements in the technique of all.

Other means may be credited for their part in certain improvements in the past, whose good results are now seen. Those above mentioned are given as illustrative, and as of all perhaps the most important. Whatever future discoveries in science may be the means of further advancement, the same will probably be along lines not at variance with what appears at the present time.

Dr. G. C. H. Meyer, in the *New York Medical Journal*, speaks very favorably of a mixture of bismuth, tannopin, and Dover's powder for the treatment of chronic forms of diarrhoea in adults where the stools are fluid and more frequent than natural.

## TREATMENT OF CICATRICAL STRICTURE OF THE OESOPHAGUS.

From the address of W. J. Mayo, M. D., chairman of the Surgical Section of the American Medical Association.

The treatment of traumatism of the oesophagus at an early period, before contraction takes place, is of the utmost importance. Many of the unfortunate results in this way can be avoided or rendered manageable. After the swallowing of a caustic substance sounding should be commenced in from two to four weeks. Foreign bodies should not be allowed to remain in the oesophagus until ulceration is produced, and prolonged attempts at removal through the mouth cannot be considered good surgery. The treatment of dilatable strictures is conducted by gradual dilation. The larger and softer the dilator the better, but in many advanced cases such instruments are wholly worthless. In these cases the use of whalebone olive-tipped probes are best for the smaller varieties, and for the larger bougies a whalebone stem to which increasing sizes of metal or ivory olive tips can be attached are the most valuable. With care and gentleness a bougie can usually be inserted in the opening, although several sittings may be required. In such cases a number of whalebone bougies lubricated with glycerine should be passed into the gullet and against the stricture, in the same manner as filiforms are used in the urethra, and by alternating probes one will usually slip through.

The treatment of non-dilatable strictures is carefully considered, and the various methods are illustrated by cases coming under the observation of the writer.

The writer makes the following summary:

1. Systematic sounding should be commenced in from two to four weeks after the swallowing of a caustic substance.
2. Should the traumatism be severe, immediate gastrostomy will lessen inflection and hasten cicatrization, sounding being carried on as before.
3. Non-dilatable strictures in the vicinity of the cricoid cartilage should be divided by external oesophagotomy.
4. Stricture above the arch of the aorta may be safely cut by a combined internal and external oesophagotomy.
5. Dense thoracic strictures are best dilated by Ochsner's method, and, if necessary, divided by Abbe's string saw.
6. Impassable strictures should be treated by retrograde dilatation.
7. A dilated stricture should be occasionally sounded for years, if not for life.

**NORTHWESTERN LANCET.**

A SEMI-MONTHLY MEDICAL JOURNAL.

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**SEPTEMBER 15, 1899.****THE TRANSPLANTATION OF OVARIES.**

Among the many novelties in the way of medical and surgical practice that have arisen within the past few years, one of the most startling in its possibilities is the announcement that ovaries have been successfully grafted upon lower animals and that the prospect of performing the operation upon woman is a good one. There have already been a number of cases in which, after the removal of both ovaries from a woman, a healthy piece of ovary has been sewn to the inner surface of the uterus with the result that the symptoms of the artificial menopause have been modified and in some cases entirely averted, pregnancy soon having followed, according to some of the accounts.

It remains for some one to transplant an ovary or piece of an ovary from one woman to another and to have pregnancy follow; then will arise a most interesting question as to the maternity of the child. It has always been considered safe to say that although there might in some cases be a doubt as to the paternity of a child, the identity of the mother could be counted upon with certainty. The quotation, "It is a wise father that knows his own child," will need to be extended to include the other parent also. It is easy to imagine cases where the transplantation act will be performed between women of different races with the result that parents of pure white blood will perhaps produce a mulatto

or some other half-breed. Going a little farther a case can be foreseen where the child springing from an ovary transplanted upon a castrated woman will be the heir to a title or an estate, perhaps even to a throne, and a disputed succession will bring before the courts a point to settle where there will be little to help in the way of precedents.

The therapeutic application of this procedure is important because if it succeeds in its object it will relieve a deplorable condition for which hitherto there has been no remedy. There are few more pitiable objects than women who have been castrated and are suffering from the train of severe nervous symptoms that sometimes accompany the production of the artificial menopause. Bad as has been their state before the operation, many of these sufferers maintain that their post operation condition is infinitely worse, and the considerate surgeon now performs Batty's operation only under much greater urgency than he demanded in the earlier days of the operation before its potency for evil had fully come to light. A gratifying success in averting or modifying the menopause has been reported from the cases of transplantation of the ovaries; in some instances menstruation has continued uninterruptedly after the castration and there have been no signs of the menopause; in others there have been slight nervous disturbances with cessation of the catamenia.

It is possible that the success of transplantation of the ovaries may lead to the performance of similar operations with other glands, as for instance the thyroid, with the object of avoiding the myxœdema that follows a thyroidectomy. This would have the advantage over the original operation that the thyroids could be taken from the lower animals, a procedure that would be objectionable with the operation on the ovaries.

**DISCRIMINATION IN FAVOR OF OSTEOPATHS.**

The Anita, Iowa, Herald makes a well founded objection to a proposed law for that state allowing osteopaths to use drugs. The editor of the Herald, with unanswerable logic shows the injustice of such a measure in the following language:

"Our contention is, that equality of privilege should carry with it the absolute requirement of equality of

sacrifice of time in preparation, and especially equality of competence. That is, if the law requires the old school physician to take 'Four full courses of study of not less than twenty-six weeks each, no two of which shall have been given in any one year,' (code of 1897, section 2582, chapter 17) and on the other hand, the Osteopaths can practice cure on a diploma showing they 'have attended an Osteopathic school for one term of twenty months or four terms of five months each' (requirement of the law of the 27th General Assembly), we find a disparity in sacrifice of time, as follows: (Remember we haven't touched on curative competency yet.) As to sacrifice in time in preparation, the law requires that the old school comply with a condition that consumes four years in taking twenty-four months of schooling and the Osteopath can become a full-fledged curative agent, on a schooling of only twenty consecutive months, if he so elects. Thus we have a disparity of four months at the books and twenty-eight months to complete the course, according to the letter of the Iowa law. Isn't that legal discrimination in time sacrifice? Now they both claim to be curative agents—that is, equally effective as curers of human ailments, but the law says one can cure on twenty months of time sacrifice, while the other shall cure on forty-eight months of time sacrifice. Don't that cinch the charge of discrimination?

"Now to equality of competency. In the first place, defenders of the Osteopathic privilege say the Osteopaths cannot use medicine under the law. That we acknowledge. Right in here comes the question of competency. For instance, the Osteopath is going to ask for the privilege to use medicine, which request is practically an acknowledgment that heretofore he was not a complete curative agent. Remember we do not have to say this. The logic of his new demand proves it. Don't it? Therefore, it is very doubtful whether he should have been permitted to practice at all, unless the Iowa legislature wished to allow him to develop his theory, by practicing on Iowa citizens, under a special privilege, conferred by the state."

Such an argument as this, coming as it does from a disinterested source and from one who has no disposition to question the truth of the osteopathic theory or the value of the osteopathic treatment, should carry a double weight of conviction to the impartial mind. In this state nothing further can be done to regulate the practice of medicine for another year; then there should be a carefully planned and systematic campaign carried on by the medical profession of the state to insure the passage of a law that shall fully protect the people against frauds and impostors. The bill whose passage is to be advocated should be agreed upon early and an appeal should be made to each member-elect of the legislature urging him to vote for the measure. The appeal should be made in person, not by letter, and by a medical acquaintance of the member, preferably by his family physician. The medical profession will be called upon to perform no more important work during the coming year.

## REPORTS OF SOCIETIES.

### MINNESOTA ACADEMY OF MEDICINE.

R. O. BEARD, M. D., Secretary.

Stated meeting, Wednesday evening, Sept. 6, 1899, at the West Hotel, Minneapolis.

The President, Dr. C. G. Weston, in the chair.

Dr. H. M. Bracken read a paper upon Epidemic Cerebro-Spinal Meningitis, of which the following is an abstract:

Cerebro-spinal meningitis is described by writers as an acute infectious disease whose seat is in the cerebro-spinal meninges but which by complication affects many organs. The writer says:

"Judging from the death returns, I am inclined to think that the specific disease known as epidemic cerebro-spinal meningitis, has often been falsely burdened with forms of meningitis not belonging to it at all, and even with diseases not attended by meningitis.

"It has been quite thoroughly established, I think, that true epidemic cerebro-spinal meningitis is due to a specific cause; the diplococcus intracellularis meningitidis. If this is true, then only should a disease be designated as epidemic cerebro-spinal meningitis, when the presence of this diplococcus has been proven either by lumbar puncture or by post mortem findings, unless the true nature of the epidemic has already been well established, and the clinical symptoms are beyond question."

Pneumococcus pneumonia must be admitted as a possibility, but on account of the difficulty of distinguishing between the pneumococcus and the diplococcus cellularis it cannot be accepted as a certainty.

In epidemics of cerebro-spinal meningitis both post mortem examinations and researches upon the fluid obtained by lumbar puncture show the presence of the diplococcus in a large percentage of cases.

"Bearing in mind the frequent presence of the diplococcus intracellularis in the nasal cavity, we need not be surprised at possibly having a mixed infection, as an accompaniment of influenza of the epidemic, or non-epidemic type. This possibility was strongly impressed upon me last winter, in a community where a number of fatal cases, diagnosed as epidemic cerebro-spinal meningitis, occurred. In the history of the few cases that I obtained, the possibility of the disease having been at the outset epidemic influenza (la grippe), was strongly suggested, while the sudden change in the character of the disease, followed by death, gave rise, in some cases, to a change in diagnosis by the attending physician. Unfortunately it was not made possible to prove culturally the presence or absence of the diplococcus intracellularis. It

therefore remains an open question whether these cases were meningitis, due to infection from the germs of influenza, or a true epidemic cerebro-spinal meningitis following epidemic influenza, or true epidemic cerebro-spinal meningitis from the outset."

The best classification is from an ætiological standpoint. Osler makes such an one provisionally, including first, primary cerebro-spinal meningitis due either to the diplococcus intracellularis or to the pneumococcus; second, secondary meningitis, which may be either tubercular, pneumococcic, pyogenic, or a complication of typhoid, gonorrhœa, diphtheria or other acute disease.

"It is the sporadic cases and small epidemics that have confused us in the past, but they should do so no longer. The appearance of such suspicious cases in any community should be the signal for immediate and thorough examination, both clinically and culturally. Minnesota, as shown by the death records, has had many of these confusing cases during the past year or more. Very seldom has the clinical diagnosis been verified culturally, and in some cases at least, there was a strong probability of the disease being dependent upon some other epidemic disease."

Councilman says "It seems probable that there must be a large number of sporadic cases of epidemic meningitis constantly occurring, which under certain conditions, the nature of which we are not aware of, may so increase in number as to form an epidemic. Nothing can be learned with regard to these cases from an examination of mortality tables. They show rather that the disease is very frequently not recognized when it occurs, and that many cases are reported as meningitis which are not so. The large percentage of cases under one year in such tables show how unreliable they are."

Since epidemic cerebro-spinal meningitis was first recognized, in 1806, many visitations of the disease have been recorded. Much allowance must be made for errors in diagnosing between the true epidemic and other forms, a matter of less importance to the clinician than to the sanitarian.

"From January first to July first of the present year, there have been reported to our State Board of Health 117 cases of cerebro-spinal meningitis, as follows:

#### CEREBRO-SPINAL MENINGITIS.

	Jan.	Feb.	March	Apr.	May	June	Total
Epidemic	7	9	3	5	4	2	30
Not Classified	17	24	10	16	9	5	87

Grand Total, 117

"Of these, thirty are designated as of the epidemic type. The others are not classified. I do

not know to what extent the diagnosis of these cases was verified by bacteriological findings, but I presume this was not generally followed out. It would seem to be worth while to do some careful work in the study of this disease in this state. Such study could easily be carried on by combining the clinical experience of this society with the laboratory opportunities of the State Board of Health.

"The conclusions to be drawn from this paper are as follows:

"(1). We should not class all forms of cerebro-spinal meningitis as of the true epidemic type;

"(2). We should not class cerebro-spinal meningitis, occurring as a complication or sequelæ of certain epidemic diseases, such as typhoid fever, la grippe, pneumonia, etc., as epidemic;

"(3). We should be very guarded in diagnosing any given case of cerebro-spinal meningitis as epidemic;

"(4). The prevention of error in diagnosing epidemic cerebro-spinal meningitis should be avoided by a bacteriological examination of fluid removed by lumbar puncture during life, when possible, or by post mortem findings."

Dr. H. L. Staples, of Minneapolis, opened the discussion. He said that his treatment of the disease had been, in the main, hypodermic injections of morphine, and ice applications. He thought that lumbar puncture had a therapeutic value.

Dr. T. S. Roberts, of Minneapolis, said that the diagnosis was often loosely made. He had seen but four or five cases in the past few years which he was willing to diagnose as "Epidemic Cerebro-Spinal Meningitis." Three or four of these cases had occurred in the "Children's Home." In one—the first of these—death had occurred in eighteen hours without medical attendance. Two weeks later, another child in the same room was taken sick with similar and characteristic symptoms. The disease was not of very severe type. Still two weeks later, a third case appeared of similar character, and later a fourth of mild type.

Dr. Arthur Sweeney, of St. Paul, had little to say beyond commendation of the paper. He believed, with Dr. Bracken, that it was practically impossible, save by exclusion, to make a positive diagnosis, excepting by bacteriologic examination of the fluid derived from lumbar puncture. He had had little success with morphia and ice, but had seen some apparent benefit from Crede's silver ointment. He thought its use worth a trial.

Dr. Roberts said that in the matter of treatment in four cases cited, one had died without any treatment whatsoever; the other three had got well with little or no treatment.

Dr. H. A. Tomlinson, of St. Peter, said that he was much interested in Dr. Bracken's paper. Whilst it was very interesting to determine the microbic quality of the disease, yet something more needed to be done to differentiate the disease clinically, before the bacteriologic examination could give much aid and comfort to the physician. Perhaps by means of it some definite differentiation might soon be discovered. The deaths in these cases are apparently not in direct ratio to the severity of the symptoms. He had seen in the past year, three cases diagnosed as "cerebro-spinal meningitis," and they undoubtedly were; but no pneumonic symptoms were present. These cases had recovered. It is to be regarded as a matter of serious importance to isolate the bacteriologic cause; but the bacterial study should be carefully collaborated with the clinical history.

Dr. R. O. Beard, of Minneapolis, said that only one marked epidemic of "cerebro-spinal meningitis" had occurred in Minneapolis within his knowledge and that was in the early fall of 1888, when 25 deaths had occurred in one month. It was a significant fact, on that occasion, that a large number of deaths from pneumonia were reported coincidentally.

Dr. Bracken, in closing the discussion, said that with our present knowledge there is no reason why good work should not be done in the study of causation. His own inquiry into the question had been incited by the occurrence of a reputed epidemic of the disease at Fairmount, Minn., in the neighborhood of which place great alarm had been excited, several deaths having been reported. Yet in no case, in that supposed epidemic, did the clinical history bear out the diagnosis made.

## MISCELLANY.

### MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The following is the program of the sections for the coming meeting at Chicago, October 3, 4, 5 and 6:

#### MEDICAL SECTION.

First Day—Tuesday, October 3, 1899, Afternoon Session—3 O'clock.

1. Enzymes and Immunity—Chas. T. McClintock, Detroit, Mich.
2. Recent Physio-Chemic Researches as to the Physiologic Action of Lecithin and Other Organic Phosphorus Compounds—L. H. Warner, Brooklyn, N. Y.
3. Communal Hygiene—Ernest B. Sangree, Nashville, Tenn.
4. Some Phases of Malaria. Quinine in—Wm. Britt Burns, Deckerville, Ark.
5. The Treatment of Cystitis—M. F. Lee, Columbus, Ohio.

6. Diabetes and its Constitutional Treatment—Elmore S. Pettyjohn, Alma, Mich.  
Second Day—Wednesday, October 4, 1899.  
Morning Session—10:30 O'clock.
7. The Treatment of Pulmonary Tuberculosis by Inhalation of Antiseptic Nebulæ—Homer M. Thomas, Chicago, Ill.
8. The Management of Cases of Pulmonary Phthisis at Health Resorts—Charles F. McGahan, Aiken, S. C.
9. The Treatment of Acute Lobar Pneumonia—Ramon F. Garcin, Richmond, Va.
10. The Art of Diagnosis—E. L. Larkins, Terre Haute, Ind.
11. The Successful Treatment of a Case of Graves Disease as an Auto-intoxication—Charles L. Minor, Asheville, N. C.  
Second Day—Wednesday, October 4, 1899.  
Afternoon Session—3 O'clock.
12. Do We Need to Think?—Wm. O'Neal Mendenhall, Richmond, Ind.
13. The Evils; Their Causes, and the Remedy That Will Edify Medicine in the United States—A. M. Osness, Dayton, O.
14. Two Cases of Typhoid Fever with Unusual Complications in Very Young Children—E. B. Montgomery, Quincy, Ill.
15. Further Observations on the Treatment of the Abdominal Viscera Through the Colon—Fenton B. Turck, Chicago, Ill.
16. Report of a Case of Complete Hernia of the Pregnant Uterus—W. V. Anderson, Toledo, Ohio.  
Third Day—Thursday, October 5, 1899—Morning Session, 10:30 O'clock.
17. Leptomeningitis—Frank Parsons Norbury, Jacksonville, Ill.
18. Pathogenesis of Functional Nerve Diseases and Its Prophylactic Indications—John Puntton, Kansas City, Mo.
17. The Association of Hysteria With Organic Disease of the Nervous System—Phillip F. Zenner, Cincinnati, O.
18. The Clinical Psychiatrist in General Practice—C. H. Hughes, St. Louis, Mo.
19. Temperament and Its Influence—Albert E. Sterne, Indianapolis, Ind.  
Third Day—Thursday, October 5, 1899.—Afternoon Session, 3 O'clock.
20. Obstipation and Its Radical Treatment—Thos. Chas. Martin, Cleveland, O.
21. Intestinal Auto-intoxication, Its Prevention and Treatment—Wm. F. Barclay, Pittsburgh, Pa.
22. Indigestion in Infants and Children—James H. Taylor, Indianapolis, Ind.
23. Lithiasis—R. Alexander Bate, Louisville, Ky.
24. Nephrolithiasis—A. H. Cordier, Kansas City, Mo.



- Fourth Day—Friday, October 6, 1899.—Morning Session, 10:30 O'clock.
25. The Therapeutics of Infectious Conjunctivitis—Dudley S. Reynolds, Louisville, Ky.
  26. Suprarenal Gland as a Therapeutic Agent in Ophthalmology, Otology and Rhinology—Flavel B. Tiffany, Kansas City, Mo.
  27. Introversion of the Iris—L. W. Beardsley, St. Louis, Mo.
  28. A Contribution to the Study of Lung Reflexes—Marion K. Bowles, Joliet, Ill.
  29. The Treatment of Dysentery—J. W. Knowlton, Paint Rock, Ala.

## SURGICAL SECTION.

- First Day—Tuesday, October 3, 1899. Afternoon Session—3 O'clock.
1. Vesico Rectal Anastomosis—J. Frank, Chicago, Ill.
  2. Intolerant Ulceration of the Rectum, with Report of Five Cases—Sterling B. Taylor, Columbus, O.
  3. Modern Surgical Treatment of Hemorrhoids—Gustavus M. Blech, Chicago, Ill.
  4. Hemorrhage from the Rectum and Its Varied Importance as a Symptom—Leon Straus, St. Louis, Mo.
  5. Treatment of Certain Ocular Diseases by Excision of the Cervical Sympathetic Ganglia—James Moores Ball, St. Louis, Mo.
  6. Urethral Endoscopy—W. R. Blue, Louisville, Ky.
  7. Inflammation of the Verumontanum—J. Rilus Eastman, Indianapolis, Ind.
- Second Day—Wednesday, October 4, 1899. Morning Session, 10:30 O'clock.
8. The Technique of Abdominal Incision, Peritoneal and Extra Peritoneal—S. E. Milliken, Dallas, Tex.
  9. Mammoth Ovarian Cysts. Report of a Tumor Weighing 245 Pounds—Jas. B. Bullitt, Louisville, Ky.
  10. Some Causes of Death After Abdominal Section—Louis Frank, Louisville, Ky.
  11. The Value of Prostatic Examination—J. Leland Boogher, St. Louis, Mo.
  12. Intestinal Obstruction from Gall Stones—J. Wesley Boveé, Washington, D. C.
  13. Obstructive Growths of the Pylorus with Report of a Successful Case of Pylorotomy—J. E. Allaben, Rockford, Ill.
- Second Day—Wednesday, October 4, 1899.—Afternoon Session, 3 O'clock.
14. What Becomes of the Medicinally Treated Cases of Appendicitis?—Louis Schooler, Des Moines, Ia.

15. Appendicitis from a Medical Standpoint—I. N. Love, St. Louis, Mo.
16. A Plea for Early Operation in Appendicitis—A. M. Hayden, Evansville, Ind.
17. Surgical Features of Appendicitis—Hal C. Wyman, Detroit, Mich.
18. A Study of Twenty-seven Cases of Appendicitis—Frank T. Merriwether, Asheville, N. C.
19. Certain Special Features in Hernia of the Female—T. H. Manley, New York.

Third Day—Thursday, October 5, 1899.—Morning Session, 10:30 O'clock.

20. Surgery of the Turbinate Bones—J. A. Stucky, Lexington, Ky.
21. Nasal Stenosis Due to Defective Septa and Its Treatment, With or Without Thickening of the Convex Side—John J. Kyle, Indianapolis, Ind.
22. Mastoid Operation, With Report of Cases—Geo. F. Keiper, Lafayette, Ind.
23. Beta-Eucaine as an Anesthetic in Eye Surgery—W. H. Poole, Detroit, Mich.
24. The Surgical Treatment of Chronic Frontal Sinusitis—Richmond McKinney, Memphis, Tenn.

Third Day—Thursday, October 5, 1899. Afternoon Session—3 O'clock.

25. Observations on Surgery of the Brain, Based on Clinical and Experimental Evidence—Geo. W. Crile, Cleveland, O.
26. Removal of Cervical Sympathetic for Epilepsy, Exophthalmic Goitre and Glaucoma—Emory Lanphear, St. Louis, Mo.
27. An Arm Saved After Being Run Over by Railway Locomotive and Crushed—S. L. Kilmer, South Bend, Ind.
28. Suture Materials in Surgery—Jos. Price, Philadelphia, Pa.

Fourth Day—Friday, October 6, 1899. Morning Session, 10:30 O'clock.

29. The General Treatment of Patients Before, During and After Surgical Operations—Fenton B. Turck, Chicago, Ill.
30. The Modern Small-bore Projectile—Aug. Schachner, Louisville, Ky.
31. The Effects of the Automatic Mauser Pistol—J. D. Griffith, Kansas City, Mo.
32. Surgical Tolerance and Results—F. F. Bryan, Georgetown, Ky.
33. The Treatment of Gonorrhoea in the Female—A. Ravogli, Cincinnati, O.

#### A CASE OF SECONDARY CARCINOMATOUS INFILTRATION TREATED WITH GUAIAQUIN.

This case was presented to the Practitioners' Society by Dr. Beverley Robinson. The patient was a woman, forty-six years old, a seamstress by occupation, who was operated on at the Newport Hospital for carcinoma of the breast in

August, 1896. About a year later a second operation was found necessary. Subsequent to this operation, the patient's arm on the affected side became swollen and painful, and she came to Dr. Robinson for relief. After employing several remedies ineffectually, the speaker said, he was induced to try guaiacuin (guaiacol bisulphonate of quinine), which was supposed to possess the characteristic properties of both guaiacol and quinine. The patient began taking three grains of this drug three times daily in October, 1898, and continued it steadily for four months; during this period she improved markedly; both the swelling and pain disappeared, the patient slept better, and she felt better generally. In February, 1899, when the administration of the guaiacuin was interrupted for three weeks, the patient had a relapse; the arm again became swollen, and the supraclavicular space was evidently more infiltrated, although her pain did not return. During the past month the patient had resumed the use of the drug, and the swelling of the arm had again disappeared, at least to a large extent. During the past few days she had complained of an aching pain in the arm, which a tight glove seemed partially to relieve. Massage had also been useful at times. Several examinations of the patient's blood had been made by Dr. Frederic E. Sondern with negative results. Dr. Robinson said he was induced to try guaiacuin in this case as an experiment, and he simply reported the result in the hope of inducing other members to give it a trial under similar circumstances, because these cases were often very troublesome and painful, and any remedy which would mitigate the symptoms should certainly be welcomed. Furthermore, recent investigations seemed to demonstrate that carcinoma was a parasitic disease, and from that standpoint medical intervention, with the use of drugs or serotherapy, again assumed practical value. The speaker said he had tried guaiacuin in several cases of malaria with rather uncertain results.—Medical Record.

## NOTES.

### A Want Felt and Filled.

If the doctor had never accomplished anything more definite in his life work than the relief of pain, than amelioration of human suffering, he would not have lived in vain. It is all very well to say that pain is physiological, that it is the cry of the nerve for more blood, yet its continuance cannot be borne by the patient, even by the most heroic Spartan. Long continued pain is dangerous, and while, of course, we never wish to obtund and remove it so completely as not to be able to ascertain its cause, and remove the same, yet the best interest of our patient requires from time to time the administration of that which is opposed to pain. Remedies like opium which relieve the pain and at the same

time are exhilarating and alluring in their effects, are most oft-times dangerous in the remote demoralization which they produce upon our patient. A remedy for the relief of pain which does not tie up the secretions, which carries with it no exaltation and no fascinations which tend in the direction of developing drug habits, is a desideratum. Five-grain Antikamnia Tablets certainly meet this necessity. Antikamnia is also more prompt and decided in its action in labor than opium, and has none of the unpleasant after-effects. It may be continued in smaller doses to control after-pains, and rather favors than interferes with the secretion of milk.

### Sanmetto and Imitations.

I have used Sanmetto extensively for the last five or six years in both old and young, male and female, in all forms of irritation of the urinary organs, from nocturnal enuresis in the young to cystitis in the aged, and have been disappointed in but few cases in obtaining good results. Have tried imitations (owing to their cheapness). The results were unsatisfactory. Have returned to the use of Sanmetto as a sheet anchor in both acute and chronic conditions of the urinary tract. I obtain speedier and more satisfactory results when given four times a day in drachm doses in hot water.

T. B. Gullefer, M. D., Coroner.  
Greensburg, Ind.

### American Superiority.

At the meeting of the British Medical Association, held in Montreal in 1897, a very prominent physician of London, England, who was examining the exhibit of nebulizers, air compressors, etc., made by the Globe Manufacturing Company, remarked to a friend: "The Americans are away ahead of us in these lines." Globe nebulizers are extensively used the world over and have long been recognized as the standard instruments of their class.

They must have plenty of time in Germany, if they really carry out Ahlfeld's plan of treating the third stage of labor which demands the absolute non-interference with the normal physiological process. The patient is placed on a clean, warm sheet, the legs are crossed, the assistant sits by the side of the patient controlling the pulse and watching the countenance, looking occasionally at the vulva to see if there is any bleeding. At the end of two or three hours if the patient has not already expressed the afterbirth herself, the attendant presses gently on the abdomen and uterus, forcing it out from above, without compressing the uterus. This is called "early expression." If this is not successful after another hour's wait, the procedure is repeated, or the placenta removed in the manner described by Credé, the strong compression of the uterus.

## ORIGINAL ARTICLES.

## SOME OBSERVATIONS UPON THE MEDICAL SERVICE OF THE LATE WAR WITH SPAIN FROM THE STANDPOINT OF THE VOLUNTEER SURGEON.\*

BY THOMAS C. CLARK, M. D.,

Late Surgeon 12th Minnesota Volunteer Infantry,  
Stillwater, Minn.

So severe, and in many cases justly so, has been the criticism upon the medical service in the late war, that I thought that it might be of interest to this Society to present some experiences and observations from the field in which I was engaged.

A correct judgment cannot be formed of the character and value of the services rendered, without a proper understanding of the conditions existing at the time of the outbreak of hostilities, and the difficulties encountered in rendering efficient service.

May, 1898, found 164,000 troops in the field, and July, 262,000, and the government totally unprepared to uniform, arm and equip, and to provide them with the necessary medical stores in the unprecedentedly short time in which such a large body of men was mobilized, and the efforts to do so were hampered by the lack of a sufficiently large and organized staff, necessary for such extensive military operations, and which our system of government does not provide for, and our small regular army was unable to furnish.

This was especially true in the medical department, as it took considerable time to manufacture the many hospital tents, medical, surgical and sterilizer chests, field furniture, etc., and to manufacture and gather together the equipment for field and general hospitals and the ambulance service.

Again the camps of mobilization were not intended to be permanent or to be occupied by large bodies of men for so long a time, as it was expected that troops would be rapidly forwarded to the front, consequently provision was not made for the proper reception and sanitary care of approximately 60,000 men, present at Chickamauga from the last of May to the middle of July, and 45,000 from that date to the middle of August.

This was noticeable in the lack of lumber for the flooring of hospital tents and the covering of sinks and latrines, to exclude the flies, which were innumerable, and in the failure to change camp grounds for the period of nearly 90 days. The water supply was at first limited for the same reason.

The necessity for using the open fields for drill purposes in order to get the raw levies into shape as quickly as possible, probably accounted for the camping of the troops in the woods instead of the open, in accordance with the practice of the regular service and the dictates of proper sanitary precaution, in a moist climate.

The total lack of competent nurses at the beginning and the failure of the war department to see its way clear to employ trained women nurses in division and field hospitals until August, must be taken into consideration.

The failure of some one in authority to take warning from the innumerable reports sent up by regimental, brigade and division medical officers of the unsanitary condition and necessities of the camp, and to provide means to correct and supply them, cannot be lost sight of.

Orders were issued that all drinking water must be boiled, but the most diligent and pertinacious requisitions, for boilers and barrels, necessary to carry out this order, resulted in failure to obtain the same, unless provided from private funds.

Lime was necessary for disinfecting purposes, but it was impossible to obtain it by requisition in sufficient quantities.

It is but just and fair to say that all these deficiencies were remedied later on and that most of the camps established after the first of August were models in the matter of equipment and of sanitary precaution, so that the death rate fell from 5.89 per 1,000 of mean strength in September, to .84 per 1,000 of mean strength in December.

I must also call attention to the fact that Surgeon-General Sternberg, recognizing the probability of an outbreak of infectious diseases in the volunteer army, issued a circular of warning on April 25, 1898, indicating the necessity of sanitary precautions to be taken to prevent the same. A telegraphic request to the surgeon-general for authority to act in an emergency was quickly responded to and authority granted if permissible.

Medical supplies not obtainable from the medical purveyor were bought at Chattanooga, by Maj. Griffith, the energetic and efficient chief surgeon Third Division, on this authority.

The medical department of the regular army of 25,000 men has not had for years a sufficient number of medical officers to fully supply the requirements of the service, consequently the volunteer army of nearly a quarter of a million of men had to depend almost entirely upon volunteer medical officers, not only for regimental, but for hospital service. An inspection of the roster of the medical officers of the volunteer army will

\*Read before the Section of Medicine of the Minnesota State Medical Society, June 21, 1899.

reveal the fact that they were above the average physician in professional requirements, and that many, and in fact the most of them were men of experience in the national guard of their respective states, and that some of these, notably, Massachusetts, New York, Pennsylvania and New Jersey, had well organized and equipped medical departments and a trained hospital corps.

These medical officers would compare favorably with their confreres of the regular service.

True, there were some volunteer medical officers who were incompetent, and some not adapted for military medical service, and the greater number of them lacking in a measure the special training for purely military duties, but what they lacked in knowledge and experience they made up in zeal, and an anxiety and aptitude to acquire knowledge, which soon rendered them capable and efficient. On the other hand the regular service contained some men who had been out of contact with active practice for so long and were so hide-bound by the necessary "red tape" of the regular service, that they were not able to adapt themselves to the new and imperative conditions which confronted them, and by reason of their rank and prominent positions were in a position to do more harm than the merely incompetent or inefficient men of the volunteer service.

The "Hull bill," providing for the enlistment of volunteers, contained a provision for the enlistment of men for the hospital corps, at the home stations, where competent or qualified men could have been selected by the regimental surgeons, from medical students, or from the members of the national guard, who had received some training in the duties of the hospital corps, but congress, in its wisdom (?) struck out this provision and provided simply for medical officers and hospital stewards, in the proportion called for by the national guard organization of the several states, which, as a rule, consisted of three of each for each regiment.

The war department, from the experience of the civil war, determined to do away with regimental hospitals and to make the division hospital, with a capacity of 200 beds, the unit of organization, and the regimental merely a dispensary service.

The organization of the division hospital consisted of a staff of six surgeons, six hospital stewards, three acting stewards and 90 privates, the latter to act as nurses, cooks, teamsters, etc., and to perform all the work incident to the proper conduct of a field hospital.

In connection with each division hospital there was a division ambulance company, consisting of seven medical officers and seven hospital stewards, three acting hospital stewards and 104 privates, with transportation on the basis of one ambulance to each 400 men of the effective force and one four-horse (mule) wagon to each

600 men. These were to be used to convey the sick and wounded to the hospitals, transfer the latter upon changing station or upon the march.

Besides these division hospitals and ambulance companies, each corps had a reserve hospital and ambulance company of the same organization and equipment to supplement the division organization and to provide for emergencies.

Most of the regiments had three each, of medical officers and hospital stewards, making a total of twenty-seven of each for a division and 81 for a corps.

The organization of the hospital and ambulance companies of each corps, called for 79 medical officers and hospital stewards. To supply them two medical officers and two stewards were detailed from each regiment, leaving but one medical officer and one hospital steward for each regiment of 1300 men, with a surplus of two medical officers and two stewards.

As some medical officers were on sick leave, there was always a shortage both in the regiments and in the hospital organizations. Later on this deficiency was remedied by the employment of acting assistant surgeons or contract physicians. Before this was done, however, the medical officers were all overworked.

Brigade surgeons with the rank of major of volunteers, as a rule, were junior officers from the regular service.

Division surgeons, men of prominence from civil practice and designated as majors of volunteers, corps surgeons with the rank of lieutenant colonel partly from the volunteers and partly from the regular service.

As Lieutenant Colonel Rush S. Huidékoper, chief surgeon of the first corps, has received a great deal of criticism on the ground that he was merely a veterinary surgeon, I desire to introduce his record, taken from the roster of the medical officers of the first corps: "Graduate of University of Pennsylvania Medical Department, 1877, formerly physician Philadelphia Dispensary; Out-Patient Physician Children's Hospital; Asst. Surgeon Hospt. Univ. of Penn.; Coroner's Physician of Philadelphia; Veterinarian (Alfort, France); U. S. Commissioner General Agricultural Exposition, Hamburg, Ger., 1883; ex-Dean Veterinary Dept. Univ. of Penn. and Prof. Internal Pathology and Contagious Diseases, Zootechnics and Hygiene; ex-Prof. Comp. Anatomy and Veterinary Surgery, N. Y. C. V. S.; Major and A. D. C. N. G. Penn. 1874-78; Major and Brigade Surgeon N. G. Penn. 1878-91; Act'g Asst. Q. M. Gen., N. G. P., 1888 (Johnstown Flood); late Surgeon-in-Chief, National Guard of Pennsylvania, Philadelphia, Penna."

Col. Huidékoper was a man of boundless energy and a tireless worker, and, although he may have been lacking in the clerical work of his office, he kept in touch with the medical officers

and the hospitals of his corps, and the two division hospitals he established were the best of that class in the Park. He made every effort to secure medical stores and equipment, and I think is deserving of praise rather than censure for what he accomplished at a time when confusion and general lack of organization reigned supreme. To provide privates for the hospital corps an effort was made at first to induce men to ask for a transfer from the volunteer service to the hospital corps of the regular army, the term of enlistment being for three years and the pay twenty-one dollars and sixty cents (\$21.60) per month against \$15.60 in the line.

A few good men were secured in this way, but the plan met with opposition from the commanding officers, who did not like to part with a good man, and it proved a failure.

The war department then enlisted men for the hospital service at the general recruiting stations, with the result of furnishing only indifferent material for the purpose required.

To supply deficiencies, temporary details were made from the regiments. As a sample of their inefficiency I would state that out of a detail of twenty men from one regiment, twelve were found unfit for duty.

It is a pleasure to state that the details from some regiments showed quite an aptitude for the work and took a great interest in it. This was notably true of the 21st Kansas, the men being intelligent and anxious to learn.

In August trained women nurses were employed in the division hospital, and from that time on the service was more satisfactory. Other duties than the care of the sick, laid upon the staff of the division hospital, were the issuing of medical supplies to the regiments, the examination of applicants for discharge for disability, after a period of observation in the hospital, and the surgeon in charge had to issue all furloughs, not only to those in the hospitals, but to members of the regiment who were certified to as entitled to them by the regimental surgeons.

Medical supplies were obtained by requisition upon the medical purveyor, approved by the division and corps surgeons, provided the articles needed were in stock; in case they were not, they were obtained through the Red Cross or other relief societies or with private funds. Strychnine, salol, guaicol and quinine could not be obtained in sufficient quantities by requisition and had to be obtained from other sources.

Hospital tents were supposed to be issued in the proportion of one to six patients, but the proportion was nearer one to eight patients. Two each of gray blankets, sheets, pillow cases and night shirts, one pillow and one mosquito netting were furnished for each patient, with a large supply of towels. These were supplemented by

large contributions from societies and individuals.

A hospital fund was created for the purchase of sick diet and delicacies, by commuting the army rations drawn, but not used by the sick, with a depot commissary, receiving the equivalent in money. This was augmented by contributions from private sources, the Red Cross and other societies.

I opened the third division hospital, June 10, 1898, and was furnished thirty-three dollars by the government to purchase necessary articles of sick diet. Aside from this amount, all supplies for the month of June came from other sources indicated above.

Too much cannot be said of the assistance rendered by the state and national Red Cross societies; from Minnesota came box after box of clothing, food, wine, jellies and medical supplies, besides generous contributions of money.

Such as were needed were used in the Minnesota regiments and the rest in the hospital. The National Red Cross Society was early on the ground, and through its efficient field agent, Mr. E. C. Smith, of New York, furnished milk, ice, food and all sorts of supplies to the extent of hundreds of dollars to each one of the hospitals; in fact these societies and private contributions carried almost the entire support of the hospitals during the month of June.

The earnings of my hospital for July were \$485.00, and for August \$1,267.00. Only available, however, the month following the one in which they were earned. Mrs. Lichtenberger, of St. Paul, representing the St. Paul Red Cross Society, faithfully looked after the interests of the Minnesota regiments. Miss Elizabeth Chant, of Minneapolis, came to Chickamauga as a representative of the Minneapolis Red Cross Society, and not only looked after the interests of the Minnesota boys, but devoted herself actively to nursing in the worst fever wards of the hospital. She was afterwards regularly enlisted as a nurse and has but recently returned from her service in the South. She was the only woman connected with my hospital, and I am sure can testify that nothing ever occurred to indicate that a trained nurse or a philanthropic woman had anything to fear from its associations.

Dr. Helen Bissell, of St. Paul, whose paper we have just listened to with so much interest, came up from Leiter's hospital, where she did valiant service, to visit the Minnesota troops and to compare notes on hospital work. I quite coincide with her opinion, that trained women nurses are not only available but necessary in field hospitals. I strongly urged their employment long before the war department saw fit to do so.

There were two general field hospitals at Chickamauga, the "Leiter" and "Sternberg."

The Leiter hospital was formerly the Crawford Springs Hotel, and quite well adapted for hospital purposes, except in the matter of plumbing and drainage, in which it was deficient.

It was in charge of Maj. Carter, U. S. A., and has been described in Dr. Bissell's paper. Sternberg hospital was organized in July, and consisted chiefly of tents with the addition of a few wooden pavilions, supplied with Red Cross nurses under the able supervision of Miss Maxwell, and Major Giffen, of Lincoln, Nebraska, was the surgeon in charge. This hospital was fully and elaborately equipped in every particular from the start, and was supposed to be capable of expansion to the extent of 1,000 beds.

I think that 400 was about the largest number there at any one time, however, but as the cases were largely typhoid fever, it was a large enough number to have in one place.

I received 1,300 patients at the 3rd Division Hospital between June 10 and August 25.

As near as I can remember without my records about 1,000 of these cases were malarial or typhoid fever in about the proportion of 200 to 800. Sixty-two deaths from all causes in the hospital, and as far as I know three or four deaths among patients transferred to other hospitals, making the death rate about 5 per cent. of the whole number of cases, and corresponding very closely with the September rate of 5.89 for 1,000 per mean strength for the whole army. One of these deaths occurred 24 hours after admission, from fulminating appendicitis. One three hours after admission from typhoid fever, and two from the same cause within 48 hours. Two deaths at least were caused by indiscretion in eating things brought in by friends and given the patients surreptitiously. I regret that the lack of a copy of my records prevents my giving a thorough analysis of these cases and deaths.

Various causes have been ascribed for the epidemic of typhoid fever which prevailed at Chickamauga during the latter part of June and the months of July and August. The enervating effect of the climate and excessive drill during the extremely hot weather of May and June, camping in the shade and for too long a period in the same ground, together with indiscretions in eating and drinking and excessive bathing in Chickamauga creek, may be cited as predisposing causes.

Contaminated water, infection caused by flies from exposed typhoid excreta, infected dust—some of the direct causes. The water supply in May and part of June was obtained from a few drive wells put down for the use of the regular troops before the arrival of the volunteers.

Troops camped along Chickamauga creek obtained water from there or hauled it by wagon

from "Blue Springs," a large, living spring about two and a half miles from the camp on the east side of the creek.

The water from this spring was very good, but the surroundings were such that the water was contaminated more or less by the men and teams engaged in hauling. In June a surface pipe line was laid from Chickamauga creek from a point just above the junction of the stream from Crawford Springs, northwesterly through the Park, supplying a large number of the troops, and as rapidly as possible each regiment was supplied with a drive well.

The water from these wells was extremely hard, many of them being drilled through lime rock.

Some regiments in the north part of the Park obtained water from Park Springs, situate on the east side of the creek and about seven miles from camp. The water from this spring was pure and clear. This was a large living spring, a beautiful clear and pure water, so situated that it could not be contaminated by the men and teams in hauling.

It was from this source that I obtained the water supply for my hospital, and I considered the water perfectly pure.

There has been much controversy about the water of Chickamauga creek as to whether it was infected or whether it was fit for drinking purposes even in its best estate.

Major J. D. Griffith, chief surgeon of the third division, by order from the medical department, sent specimens of water in two-quart sealed bottles taken from Chickamauga creek, Blue Springs and drive wells in the vicinity of the 5th and 9th Pennsylvania regiments, the latter supposed to be infected, to the government laboratory at Washington for analysis, but no report was ever received of the result of the analysis. It was from the 2nd battalion of the 9th Pennsylvania that we received our most virulent cases. A drive well was driven at the bottom of a small ravine or depression—the regiment being camped upon a rocky ridge above it. This well was stoned up for a distance of two feet above the ground and the stone work securely plastered, but the ridge above was a shaly rock that prevented the digging of sinks to a greater depth than four or five feet, and it is quite possible that water from these sinks soaked down through the crevices of the rock and obtained access to the bottom of the well. The water of most of these drive wells, however, I think was pure, although not very agreeable drinking water.

The water of Chickamauga creek may not have been contaminated, but it certainly was not fit to drink. As it came from the surface pipe line, it was hot and coffee colored.

My horse not only refused to drink it, but also to even put her nose in it, and I do not blame her.

As stated, before, sufficient lumber could not be obtained to construct covered sinks and latrines, and although every effort was made to have fresh earth used as a covering, it was impossible to have this done at all times, and the flies, which were intolerable pests, without doubt were a great factor in conveying infection.

Of the nine regiments composing the 3rd division 1st army corps, six were camped near Chickamauga creek, and until the practice was forbidden, a large proportion of the men bathed daily in the creek. The natives informed us that no one ever thought of bathing in the creek during the summer, as it was sure to be followed by sickness.

A member of the 12th Minnesota was drowned one evening in the creek while bathing. Three companies spent about an hour and a half in the creek searching for his body. A large proportion of the sick in hospital from the 12th Minnesota came from these three companies. Some of these cases were malarial, but a large percentage was typhoid.

There were two types of the disease prevalent. A very mild form when taken in time, but which frequently proved fatal owing to the late date at which the patient appeared for treatment, and a type that was virulent from the start, with high temperature, hemorrhages, excessive diarrhoea, etc.

All the cases were characterized by great prostration, and strychnine and stimulants were a necessity from the beginning of the case.

The prevalence of flies and the lack of a proper place precluded making many post mortems, but such as were made presented the typical bowel lesions in a very marked degree. Many cases could have been saved if we had got them sooner, but the excessive amount of sickness so crowded the hospitals that the men had to be left in quarters or in the re-established regimental hospitals until room could be made for them.

Convalescence was tedious and the necessity of a convalescent hospital very apparent. One established on Missionary Ridge or Lookout Mountain would have been invaluable. In August hospital trains began to arrive from the north, and many were removed by them to the bracing northern climate.

The cause of the unusual amount of sickness, among presumably healthy men, may be summed up as follows:

1. Too large a number of men in one camp.
2. Occupation of the same ground for too long a period.
3. Camping in the woods, instead of in the open.

4. Indiscretions on the part of the men in eating and drinking.

5. Infection from flies and dust, from uncovered sinks and typhoid excreta exposed on the ground.

6. Some, but probably slight, infection through water.

The deficiencies in equipment and hospital accommodation in the early days of the camp were largely incidental to the immense amount of work thrown upon the government in the early days of the war, and, as I stated before, were entirely relieved by the latter part of August.

The experience of the late war conclusively proves the necessity and value of the Military Medical School established in Washington by the surgeon general, by order of the secretary of war, and also that this school should be thrown open to the medical officers of the national guard, that the country may have a sufficiently large number of trained military surgeons, ready for duty in future emergencies.

It has also demonstrated that the hospital corps as at present constituted is altogether inadequate and should be largely increased.

I think, also, that it has been demonstrated that trained women nurses should be provided for in the organization of the medical department, and that they be utilized to a certain extent in all hospitals.

#### A CASE OF LABOR COMPLICATED WITH NEPHRITIS.\*

By THEO. L. HATCH, M. D.,

Owatonna, Minn.

On the twenty-ninth day of November, 1898, I received the following letter:

"Dr. Theo. L. Hatch,

"Owatonna, Minn.

"Dear Sir:

"For the last month or six weeks I have not been feeling at all well. Am very nervous, am troubled a great deal with wakefulness at night, my bowels have a tendency to be constipated, I have a considerable headache, my heart throbs frightfully upon the least exertion, and at those times I get slightly dizzy. Am troubled at times with an itching of the skin all over the body, and my feet are so badly swollen that I cannot wear my slippers. I have but very little appetite and have at times a slight tendency to nausea, but do not vomit. I get tired upon the slightest exertion. If you think you can do anything to relieve my condition, please send me something by return mail.

"Very respectfully,

"Mrs. \_\_\_\_\_."

The above letter was written by a lady aged 28, American, primipara, between seven and

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eight months advanced in pregnancy, living in a village ten miles distant. Married one year. Occupation for several years prior to marriage, teacher. Family history: mother died at the climacteric at age 45. One sister died at age 17 of consumption. One sister about to die of the same disease at age 31. Father still living, aged 71, but had cancer removed three years ago. Personal history good, except that for years she has at times been troubled with spells of slight indigestion. Investigation as to present condition of urine revealed the following: Amount passed in twenty-four hours, 18 ounces. Reaction, acid. Specific gravity, 1.022. Urine cloudy and badly loaded with mucus, but after careful filtration nearly a normal straw color. Upon testing for albumen, at least two-thirds of the contents of a test tube became coagulated.

The microscope at this time revealed no pus or blood corpuscles, but did give evidence of epithelium and a few granular casts. No test for the amount of urea, uric acid, etc., was made at this time.

Examination of the patient a few days later revealed a glistening, white, bloated appearance of the skin. Temperature  $100^{\circ}$  to  $101^{\circ}$ , pulse, when sitting quiet,  $120^{\circ}$ , and upon exertion,  $140^{\circ}$  to  $150^{\circ}$ . Tongue coated with a white fur. Examination of the urine was made every two or three days. In a very short time it became brownish in color and slightly diminished in quantity. Blood in marked quantities and pus cells in small numbers appeared. Also the number of casts increased and the amount of epithelium. I gave a guarded but rather unfavorable prognosis to the husband and family of the patient, but failed to impress upon them the gravity of the situation, they resting easily in the idea that the patient was strong and rugged and capable of a great deal of endurance. Present amount of urea about 180 grains per day, as near as could be estimated.

The treatment of the patient up to the time of labor was as follows:

Basham's mixture, two-thirds tablespoonful, increased to a tablespoonful and a half, four times a day.

Trional, grs. 15, increased to grs. 22 at bed time.

Cascara to regulate the bowels, though a resort was had about once a week to 20 grs. of calomel.

The patient also had ten drops of fluid extract of hydrangea four times a day, well diluted with water. I also commenced with one drop doses of a solution of nitroglycerine of a strength of 1 to 100, to be given with the hydrangea, but the patient could not tolerate it.

During the entire treatment of this case this remedy was tried several times, but as often were we compelled to abandon its use.

The result from the calomel always seemed to be beneficial, promoting both catharsis and diuresis. Patient placed on an almost exclusively milk diet, though an occasional allowance of a little soft toast was conceded. Buttermilk was also prescribed, but was offensive to the patient.

As nearly absolute quiet as possible was enjoined, but not fully carried out. About December 15, and a little over two weeks after the above treatment was instituted, the patient had a very profuse flow of urine, at which time the bloating of the feet entirely disappeared, and all of the symptoms heretofore given became very largely ameliorated, but not entirely, the heart symptoms the least of any.

In the afternoon of December 18, moderate labor pains set in and the bag of waters ruptured.

I was called to the case on the morning of December 19, arriving at 9:45 a. m. Labor pains coming rather indifferently, first a fairly good pain, then two or three slight ones. Patient less nervous than she had been for some time. I felt that I had no reason to expect anything else than a cyclone before it terminated, and prepared myself for it. However, I determined that until the storm broke I would treat the case as I would any ordinary case of labor except to exercise excessive vigilance in watching it.

Immediately upon arriving to attend the case, I tested the urine and found it of a brownish color, heavily loaded with mucus, and it became nearly solidified with coagulated albumen upon boiling.

For twenty-four hours after my arrival either the nurse or myself were constantly at the patient's bedside, and I never was out of calling distance. All of the essentials for putting up a good fight against any complication that might reasonably be expected to arise were ready for immediate use. About one hour and a half after my arrival I gave the patient ten grains of quinine with a view to stimulating the pains, and for a short time there seemed to be good results, but they finally lapsed to their old standard.

This condition of affairs continued until about 7 p. m., when the pains rallied and became quite strong. Soon after this I began the administration of chloroform, giving just enough to take the sharp edge off from the pain, but not to produce complete insensibility.

At between 11 and 12 p. m., the occiput, which originally presented to the right, had begun to present posterior to the pubic arch, when the pains began to diminish and the patient's pulse to quicken. Up to this time it had seemed as though the delivery would be readily accomplished without artificial aid. I had the patient prepared and placed in proper position, chloroformed her to complete anæsthesia and delivered her with the forceps of an eight months'



child, which evidently had been dead for two or three days.

After the delivery of the child the patient was put to bed. She came out from under the chloroform nicely. I remained with her eight hours after the delivery of the child, and visited her again at evening and every day for several days. The urine was examined daily with the following result: Specific gravity, 1024 to 1026. Reaction, acid. Color, at times brown, and at times bloody. Always heavily loaded with albumen. Amount of urine in twenty-four hours, from 16 to 20 oz. Patient had to urinate oftener than normal, but only small quantities. Epithelium and number of casts increased, particularly the granular casts. Blood in quite large quantities, also pus cells. Estimated amount of urea in twenty-four hours, 200 gr. There was no œdema of the feet, but the countenance had a puffy appearance, and the heart's action remained very rapid, with various murmurs, undoubtedly anæmic in origin. Pulse, 140 to 150 and very weak. Patient very nervous, and there was troublesome insomnia unless controlled by trional or sulphonal.

The Basham's mixture was continued until the 28th inst., when the following prescription was substituted for it:

R Sodium iodide, dr. 1½.  
Tinc. pulsatilla, drops 10.  
Tr. celery, drachms 2.  
Dialyzed iron, fl. oz. 1.  
Ess. pepsin, q. s. ad. fl. oz. 4.

M. S. A teaspoonful 15 minutes after meals.

Patient fed regularly a proper allowance of milk every four hours. The Kenyon hepatic tablet was substituted for the cascara, and given sufficiently at night to keep the bowels open.

The hydrangea was continued in the dose previously given.

This treatment was continued for several weeks, and under it the urine gradually cleared up, though for nearly two months presenting more or less of the characteristics above described. While under this treatment she was taken with la grippe, commencing Jan. 17, 1899. Accompanying the grippe, the patient suffered with intense pains in the ovarian region, a dull aching pain at the base of the brain, and the thyroid gland became quite markedly enlarged. At this time she was also troubled with considerable muscular rheumatism. The pain at the base of the brain continued after her recovery from the grippe, and having known this symptom to be produced by the long continued use of iron preparations, I discontinued the prescription containing the dialyzed iron, and substituted for it the following:

R Sodium iodide, dram 1½.  
F. E. cimicifuga, drops 15.  
F. E. manaca, fl. dr. 3.  
F. E. passiflora incarnata, fl. oz. 1.  
Kola cardinette, q. s. ad. 8 oz.

M. S. Tablespoonful four times a day.

At the time this prescription was begun the urine had become improved in every way, but the heart's action was still very rapid, ranging from 115 to 135. The insomnia and nervousness had also continued.

Under this prescription the patient improved very rapidly, the nervousness and insomnia disappearing, the rheumatism and muscular weakness passing away and the heart continually approaching normal.

This last prescription was given up to June 1, 1899. At this date the urine had been normal for nearly two months, but the heart's action had remained somewhat rapid till about May 15.

A thorough examination of the patient made June 1 showed as ruddy a specimen of womanhood as one could wish to see, with all functions normal, including the renal secretion. Patient doing her own housework, and caring for a sick sister.

Whether my patient is still existing on the verge of a volcano that is liable to undergo an eruption at any time, of course time alone can demonstrate.

The future safe termination of a pregnancy would, of course, give a favorable outlook. Though I had strongly advised to the contrary, there is pretty good evidence that a second pregnancy has existed since May 10.

#### OBSERVATIONS ON THE TREATMENT OF TUBERCULOSIS OF BONES AND JOINTS.\*

BY C. H. MAYO, M. D.,  
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Rochester, Minn.

In the brief paper here presented I shall confine my remarks to what has given the best results in our practice.

Tubercular meningitis causes almost the only death due to pure tuberculosis, and this because of the disease being confined in an unyielding space compressing vital structures. The deaths commonly attributed to the germs are probably the results of mixed infection.

Granulation tissue is the characteristic primary effect of the tubercle bacilli, other changes are secondary from various stages of retrograde metamorphosis or from mixed infection.

\*Read in the Section of Surgery of the Minnesota State Medical Society, June 22, 1899.

The first product is the gray granulation or tubercle which becomes later the yellow nodule, and following this coagulation necrosis, caseation and finally liquefaction.

The growth or progress of the disease is favored by inherited or acquired diminished tissue resistance. Pus is not ordinarily produced by tubercle bacilli, but the fluid which so much resembles pus is the result of coagulation necrosis suspended in the product of liquefaction, and known as cold abscess.

Tuberculosis of bones and joints must be considered as a secondary lesion, that is, the bacilli must be carried in the circulation and deposited at its point of attack, the ends of the long bones from their peculiar structure favoring its deposit and growth. Acute osteomyelitis, as a rule, affects the shafts of the long bones, while this is a rare location for tuberculosis, excepting in the phalanges, when it is known as a spina ventosa.

The periosteum is also rarely affected by tuberculosis, but frequently by syphilis.

In the light of pathological disclosures of the past few years, it is probable that primary tuberculosis of synovial surface is rare, especially of the knee. Our modern authors state that it does not occur before puberty. Tuberculosis synovitis is then a secondary invasion from the focus in the bone, and early relief by surgical intervention before the joint is invaded will mark the progressive surgeon and save many joints.

The deposit of tubercle in the epiphyseal end of bone produces an infarct or wedge of necrosis, corresponding to the region supplied by the artery involved. This region of lowered resistance is invaded by gray granulation which passes through its varied stages of retrograde change, finally opening into the joint or possibly into the shaft; rarely it works its way to the surface of the bone by way of the epiphyseal cartilage.

Tubercular hydrops in the early stage is the simple increase of synovial fluid, the result of irritation; later by direct infection of the synovial surface with destruction of cartilage and periarthritic thickening, we have the various stages of tubercular joint.

The advanced cases are those in which the products of degenerative change from the bone and of the synovial surface become suspended in the joint fluid.

The characteristic of repair is the change of the spongy granulation tissue into permanent tissue, and according to its extent do we have the production of adhesions and deformity with consequent impairment of motion and use. It is such results of disease which we endeavor to modify by treatment in cases too far advanced for cure. Tuberculosis sicca, a dry form in which earlier or more common changes are absent and yet the destruction of bones and synovia is

marked, occurs frequently in the shoulder joint, but rarely in patients under forty-five years old.

Young people complaining of some lameness or occasionally impaired motion of a joint, pain, atrophy of muscles with tenderness upon deep pressure at some point about the epiphyseal line, have a probable granuloma at such a point in the bone. Should there be a slight ridge or thickening here also, or a tubercular heredity, the diagnosis is more sure.

In these cases we employ two methods of treatment which have given equally satisfactory results:

First—An incision down to the bone separated by retractors and protected by wet gauze. A fine tipped pacquelin cautery is then used to penetrate the bone by burning its way through; penetration is rapid after the cortex is passed, and one can readily tell if soft tissues are encountered in the bone. The bone cavity is then filled with iodoform powder and the external wound closed without drainage.

Second—To use a drill and gouge to locate and remove the disease with similar treatment of the wound and closure. Where the disease has advanced to more pronounced destruction and there is an excess of fluid in the joint, we know of no treatment which has given such good results as the injection of iodoform emulsion, ten per cent, in glycerine into the synovial sac after expelling its contents by means of a trocar and canula. This treatment was advanced by Bilroth and Mickulicz in 1882 and has been advocated in this country by Dr. Senn. In the same manner have been used balsam of peru, carbolic acid, solutions of iodine and of formaline, iodoform in olive oil and iodoform in ether, but the glycerine mixture has given us the best results, possibly by reason of a special leucocytosis effect of the glycerine. This irritation of more or less intensity probably accounts for much of the benefit derived from this and other methods of injection or irrigation treatment.

We use no splint after injection, but seal the punctured wound and apply ordinary aseptic dressing, and in the joints of the lower extremity they are confined to bed about four days. There is considerable reaction during the first twenty-four hours and severe pain, requiring morphia for its relief. The temperature at the end of from twenty-four to thirty hours usually rises from two to four degrees in favorable cases and gradually lowers during the succeeding three or four days. We then urge the use of the joint, repeating the injection in two or three weeks, and in most cases secure a marked improvement in from two to four injections. Should there be rice bodies which obstruct the lumen of the canula when evacuating the joint, or large collections of degenerative tissue, an incision may be made freely into the joint for their evacuation, or occasion-

ally the joint may be flushed by a three per cent boracic acid solution before injection. If an incision is made, it should be closed securely without drainage and the joint injected as before described. Favorable changes noticed at second or later injections are increased viscosity of the synovial fluid, becoming more mucoid and clear if previously turbid, and occasionally a joint will give the sensation of fluctuation without increase of fluid, a favorable change in the granulations forming permanent tissue.

There is a class of tubercular joints characterized by great excess of periarticular thickening, the stiff, doughy joint without much fluid which is not benefited by this or any other treatment other than excision or erasure.

The evacuation and injection treatment we apply in nearly all so-called cold abscess cases, especially those resulting from tuberculosis of the vertebræ, but the method is practically worthless in all cases of mixed infection or open sinuses, such cases requiring direct surgical relief by making freer drainage or complete removal of diseased tissue.

When inserting the trocar the skin is drawn tight at the point of insertion, the trocar being passed for a space close beneath it before entering the cavity to prevent leakage from the puncture and facilitate sealing. In children the primary injection varies according to the age and the joint, from one-fourth to one drachm of ten per cent emulsion being used, which, if well borne, may be increased at the next treatment.

Adults receive from one-half to two drachms at the primary injection, increasing to three or four drachms later. Zeller recommends the use of Bier's elastic band to produce congestive hyperæmia in association with the iodoform treatment. DeVas claims as high as seventy-two per cent of cures by the use of iodoform in oil.

During the past four years we have applied this method of treatment to thirty-one knee joints, twelve wrist, eleven ankle, six elbow and four hip joints.

#### EXCISIONS.

We have secured the best and most useful results after excision of the elbow, next the knee, and, in order, the shoulder, hip, ankle and wrist. There is one excision which has given such good results that I will call especial attention to it. This is known as Heutter's excision of the ankle, and is made by an anterior cut directly across the ankle in front down to the tendons, a cat gut suture is passed through and back in each tendon and the nerve, applying forceps two of a kind to the ends of each suture and different pattern of forceps to each cord; then, drawing up the loops of suture, the incision is continued through the tendons into the joint, which at once opens, and all the diseased tissues can be removed; by draw-

ing on each similar pair of forceps the tendons are at once properly approximated and the wound closed with drainage at the side.

There are many less excisions in our practice, as we have become more proficient in the use of iodoform injections and in making early diagnosis of the disease.

Iodoform certainly has a specially favorable effect in destroying or modifying the effects of tubercle bacilli.

#### SOME ABUSES IN NASAL SURGERY.\*

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Minneapolis.

In discussing this subject of abuses in nasal surgery, I have no desire to criticise the surgical methods adopted by many of my worthy confreres, or to decry in any possible way the necessity for many such procedures. Yet, I feel sure that the review of half a dozen cases that have come under my observation during the year just past, showing the results of over zealous and enthusiastic operators, can not help but convince many of you that careful and conservative measures are quite as appropriate here as in other departments of surgery.

While admitting the importance and necessity for many of these operations, I should as strongly condemn as unwise and imprudent the almost disastrous extent to which many of them are carried. You will readily perceive the wisdom of this criticism as we proceed, and you consider that all the abnormal conditions included in this discussion are of a non-recurring and non-malignant character. It is certainly apparent to you all that there is a broad middle ground between the ultra conservative practitioner who believes in non-surgical interference, depending almost entirely upon local therapeutic measures, and the ambitious radical extremist who seizes all the bone, cartilage and connective tissue, whether innocent or otherwise, that has the hardihood to show the least prominence between the anterior nares and the vault of the pharynx. It will be my endeavor in this short paper to show the utter futility of the one, and to point out some of the dangers and serious consequences, of the other.

It is not an unusual occurrence with many of us, who are limiting our practice to the diseases in question, to meet simple cases that have been under treatment for months, and often years, where a resort has only been made to the use of douches and sprays, never affording more than temporary relief, and in many instances aggravating the difficulty rather than relieving it. Es-

\*Read in the Section of Ophthalmology, Otolaryngology and Rhinology of the Minnesota State Medical Society, June 23, 1899.

pecially is this true if the solutions used are of an irritating character, as they then invite an additional blood supply to the part, which produces a dilatation of the blood vessels, and in time results in the consequent deposit of connective tissue. It is in such cases that a proper conception of the diagnosis and pathological conditions should suggest intelligent and rational treatment, which would be of inestimable benefit to the patient, and the greatest satisfaction to the attendant.

I will now review the record of a few typical cases to better illustrate and emphasize the meaning I wish to convey, and, at the same time, indicate in a way the chagrin and embarrassment many of us would experience were we present when some lucky fellow discovers the inexcusable errors in our judgment and work:

#### CASE I.

A. C. W. Male. Aged 32. Bookkeeper in Minnesota for ten years. General health always good, except for the persistent and almost incessant blocking up of the nasal cavities, particularly when in a recumbent position. This condition continued in spite of more than five years treatment with the most approved douches, sprays and repeated applications of the cautery. Nothing ever seemed to afford even temporary relief. There was ever present a greenish, fetid discharge, which formed crusts that were removed with difficulty, and for a year or more there was a constant ringing in the ears with apparent dullness of hearing. He consulted me April 4th of this year, not for treatment, but rather for advice concerning a suitable climate to which he could go for relief from his distressing condition. When an examination was suggested, he strenuously demurred, saying that an examination always meant a new spray or an additional burning, and he had had quite enough of both. However, he reluctantly consented to a superficial examination, after assuring him that in order to give him any information of value concerning the selection of a climate, I should be obliged to know something of his condition. This inspection revealed the following:

The anterior nares were very capacious, with the mucous membrane over the anterior portion of the inferior turbinated bone thoroughly bound down by cicatricial tissue, as the result of frequent cauterizations. A dry, atrophic condition with the normal functions largely arrested. Loss of the sense of smell, due to the destruction of the olfactory membrane in the roof of the mouth. The septum was found to be straight and regular back to the extreme posterior portion of the vomer, where was found a striking deformity, which presented a picture when examined posteriorly not unlike the letter "S." The opening on either side would scarcely more than admit the passage of a probe holding the smallest piece of cotton,

and the least congestion in this locality involving the mucous membrane covering the posterior portion of the inferior turbinates, would necessarily complete the stenosis. The existence of this malformation demonstrated beyond question the lack of comprehension of the previous operators, or what was infinitely worse, if the condition were appreciated, was their gross negligence in failing to operate. My next difficulty was to convince my skeptical friend that he had anything left in his head to remove. The results following the use of the saw, bone forceps, drill and cautery were sufficient to convince him of the importance of the operation.

I trust you will pardon me for dwelling so long upon the details of this case. I can assure you I should not have done so had I not realized how frequently these conditions are overlooked, and how easily and effectively they are handled.

#### CASE II.

Mrs. L. G. Aged 30. South Dakota. Housewife. First saw her in January of the present year. She complained of an inability to breathe through the left nostril; excessive dropping of mucus into the throat; partial closure of the left tear duct. Had been treated for several months at different intervals with various sprays, etc. At one time a strong acid was applied with cotton, which occasioned great pain and distress with greatly increased discharge, which continued for several weeks, resulting in almost complete closure of the nostril. Following this, her faithful attendant resorted only to copious use of douches, sprays and oils. My examination several months after showed extensive adhesions between the middle and inferior turbinates, with the septum, effecting almost complete stenosis. The error in the conduct of this case was so apparent, that comment is hardly necessary. It is safe to assume that the result would have been reasonably satisfactory had the adhesions been regularly broken up, and the sloughs removed until the parts were entirely healed. The treatment in this case was so simple and effective that it is not necessary to relate it any more than to state that the obstruction was entirely removed with saw and forceps, and the relief was complete.

#### CASE III.

I. D. L. Aged 41. Residence Minneapolis. Complained of partial stoppage of both nasal cavities; offensive and copious mucous discharge, with frequently recurring attacks of asthma. Had been treated as usual with sprays and douches, and in addition to this, large and long-continued doses of blood remedies had been poured into this poor man to correct the supposed existing blood disease. The removal of a large number of myxomatous growths from the nasal cavities was sufficient to relieve all the distressing symptoms.

## CASE IV.

S. E. Male. Residence, North Dakota. Applied for treatment in November, 1898. Complained of dry catarrh, with large accumulations of dry crusts forming in nose, which he could only remove after snuffing up water for some time. Gave a history of having been operated upon one year before, at which time large quantities of bone and tissue had been removed from both nostrils. Great relief was experienced for a few months, when this condition supervened, and an offensive odor developed. Inspection showed a cavernous opening and entire absence of the inferior turbinated in left nasal cavity, with the middle turbinated almost totally obliterated as the result of repeated cauterizations. The right side presented a somewhat better condition, though it showed the results of great mutilation. I could offer but little encouragement in the treatment of this case, as the destruction of the parts had robbed the nasal cavities of much that was necessary to aid in its normal functions. The cavity left after the removal of the inferior turbinated bone was a receptacle for the accumulation of dust, small sticks and straws. The acute sensibility of the membrane was largely gone, owing to the atrophic condition which was rapidly developing, consequently the presence of foreign material was not appreciated until it interfered mechanically with respiration.

## CASE V.

W. A. L. Aged 37. Merchant, northern Minnesota. General health robust. Received injury to nose when a lad by falling on the ice. Occasioned but little difficulty at the time, and was not attended by a physician. Since that time the nose has been somewhat deformed, and for more than ten years had experienced difficulty in breathing through right nostril. Had passed through the hands of several operators, and the condition of the organ when I examined it, less than a year ago, proved conclusively the truth of his statement. The inferior turbinated on the left side had been completely enucleated, leaving a high opening which was exaggerated by the concavity of the septum. The right nostril was almost completely stenosed by the convexity of the septum, and the hyperbrophied condition of the right inferior turbinated. Just why this afflicted side had been so noticeably slighted by so many willing hands, was difficult to explain, unless an operation here promised a less brilliant result. A straightening of the septum, and a slight cauterization of the right inferior turbinated cured the trouble, and gave ample relief to that side, but nothing could be done to the left nostril to fill up the capacious receptacle that must continue to exist.

## CASE VI.

A. W. Male. Aged 40. Had been treated over a long period of time with all the solvent remedies known to the profession. Finally found some one who comprehended the nature of the trouble to be a deflected septum, and who proceeded at once to correct the difficulty by removing a large portion of the septum, and thereby producing a permanent opening between the cavities, which can never be repaired. This procedure afforded some relief, but I am sure you will agree with me that a less radical operation would have better served the purpose.

## CASE VII.

The seventh and last case to which I shall call your attention was extraordinary only in this, that a simple, uncomplicated condition could possibly exist so long and avoid detection when so many were seeking an explanation for the obstinate and unusual symptoms. The case was a poorly nourished, anæmic, nervous little girl, scarcely five years of age, who was brought to my office by the mother less than a year ago, and the following history elicited: The child was in perfect health up to something like two years before, when she developed a violent catarrh with very acrid and offensive discharge, without any previous illness. The discharge seemed more pronounced from the right nostril, although both were involved. The whole lower part of the face was swollen and greatly disfigured, covered with an unhealthy eruption, produced by the poisonous and acrid character of the secretion. Many solutions had been tried, only to aggravate the distressing condition. The nose was repeatedly probed and cauterized and large quantities of tissue removed without effecting any appreciable change. Alteratives and constructives were given with the same negative results. Finally the nose was curetted, or as the mother expressed it "dug out." After several weeks of prostration following this operation, the nasal cavity assumed its usual condition of chronic discharge, but I judge with much less obstruction, as much of the redundant tissue had been removed. This very fortunate result afforded me the excellent opportunity of locating and removing the difficulty, which I should perhaps not otherwise have been able to do. Passing a probe along the floor of the nose back toward the soft palate, I discovered a slight elevation which was hard and unyielding. I assumed at once that this obstruction was something foreign, or a malignant growth. In my efforts to obtain a section for microscopic examination, the cutting forceps revealed an encysted mass, containing what proved to be corroded and disintegrated metal, and I have here in my hand the head of an iron screw, all that was left to verify the nature and character of the disturbance. This which was undoubtedly placed there by the child was the be-

ginning of this trouble, some two years before, and was the source of all the subsequent disturbance. I have no word of comment or criticism for those who worked so diligently to relieve this condition, but will add that all the symptoms I could gather from the history of the case, from beginning to end, pointed unmistakably to the presence of a foreign body.

Appreciating the fact that some of you may differ with me in your ideas of the management of many such conditions, I will, at the risk of taxing your patience, point out more definitely and explicitly, what seemed to me the most culpable errors and abuses in the conduct of these several cases, hoping that it may provoke comment, favorable or otherwise, which will be received with the greatest consideration.

The evident lack of comprehension of the condition of things in the first case was very greatly deplored, for had it been otherwise, and the excessive use of the cauterium withheld, the normal functions of the mucous membrane might have remained unimpaired, and the posterior obstruction removed without appreciable detriment to the other tissues. Hence, I have no hesitation in condemning the use of the cauterium, unless, perchance, it falls into the hands of one with infinitely more discretion and ability than was manifested in this case.

Much the same criticism would apply in the second case, where the escharotic was indiscriminately used over the middle and inferior turbinates, resulting in their extensive adhesions to the septum, all of which could have been avoided had proper precautions been adopted after the application of the acid. I should question the propriety anyway of using caustic acids in cases of this kind. It is always difficult to confine the application to a limited area, and always produces great discomfort to the patient by increasing the pain and discharge. The galvano-cauterium or bone forceps, judiciously used in experienced hands, will be much more effective, with an absence of many of the distressing symptoms.

In the third case it would be difficult to conceive how any observer, competent to use the nasal speculum, could possibly avoid finding the growths that partially obstructed the nasal cavities, producing the reflex conditions mentioned. Further comment is unnecessary, as no question could arise concerning the feasibility of an operation when such conditions exist.

The results in the fourth case, where there were evidences of extensive surgical interference, showed conclusively that the work had been excessively overdone. While I concede the wisdom and necessity of removing the turbinates in extreme cases, and have seen remarkable benefits resulting therefrom, yet I am constrained, after recalling my observation of these and other cases, to sound a word of warning to those who rather recklessly and without experience, resort to this

procedure, when less radical means would effect greater relief with less possibility of unpleasant consequences.

As was demonstrated in one or two of the cases related, the great mutilation of the parts will frequently remove sensitive areas which are highly essential to the preservation of many of the normal functions of the nose, leaving in their place hard, cicatricial, impervious tissue, that is absolutely devoid of sensibility.

In the fifth and sixth cases where the septum was involved the errors were so apparent and the correction so simple, that it is hardly necessary to dwell upon them. Suffice it to say, that I should always deprecate the removal of much of the cartilaginous portion of the septum, unless I was very positive I could approximate the surfaces after removal. A large aperture in the septum is often unimportant, but it is always a receptacle for offensive mucus, and to a sensitive person, exceedingly disagreeable.

The failure to locate the foreign body in the seventh case, would, I presume, from a surgical standpoint, be considered reprehensible, but knowing something of the difficulties attending the examination and manipulation of a small child, I am inclined to be charitable, particularly when the foreign body is lodged well back on the floor of the nose, and the parts distorted from excessive swelling.

In closing, I wish to state to those who follow this line of practice exclusively, that some of this work that I have reviewed was not from the hands of experts, but rather from some of our professional brethren who do many of these operations on the side, simply for recreation and pastime.

If the presentation of these few cases and the comments offered are of sufficient importance to awaken a little keener interest in this department of surgery, I shall feel that the object and purpose of this paper have been fully attained.

#### THE NEED OF MORE SYSTEMATIC INSTRUCTION IN THE DISEASES OF ADVANCED LIFE.\*

By J. W. BELL, M. D.,

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One of the saddest commentaries on the medicine of the past can truthfully be said to be the neglect of the aged, as indicated by the scanty literature on the subject and the general apathy existing in the profession relative to the study of the normal changes as well as the diseases peculiar to advanced life. To the profession of France largely belongs the honor of laying the foundation for whatever we possess, fragmentary though it be, of senile pathology.

\*Read in the Section of Medicine of the Minnesota State Medical Society, June 21, 1899.

Prior to the beginning of this century those who wrote upon the subject, wrote, like Cicero, from a contemplative literary standpoint, with the possible exception of the small treatises of Ployer, Welsted and Fisher. It remained for Pinel, in his elaborate treatise on clinical medicine, published in 1815, the result of his vast experience in the Salpetriere Hospital, to furnish the nucleus of our present knowledge of senile pathology. In 1839 Constatt published his treatise on the diseases of old age. In this work we behold the first systematic effort to bring together the scattered fragments of senile pathology. Charcot, in referring to this work, says: "In it, imagination occupies an enormous amount of room at the expense of positive and impartial observation." Cruveilhier, a few years later, from material gathered during his stay in the Salpetriere, shed additional light on the pathology of old age by the publication of his "Atlas of Pathological Anatomy."

The names of Rastan and Charcot, both eminent clinicians, having access to the wards of Salpetriere, have contributed much to our knowledge of the diseases of advanced life. To Charcot, especially, are we indebted for a small, but valuable, treatise. Drs. Geist, Day, McLaughlan, Cruveilhier, Beau, Humphrey, Fothergill and Loomis are names worthy of mention as able contributors to this much neglected subject, and be it remembered that "The Twentieth Century Practice of Medicine" was the first of our many excellent works on practice to add one chapter on old age and its diseases.

The want of interest as indicated by the scanty and fragmentary character of the literature on the subject is largely responsible for the apathy existing today in our medical schools. The average medical student passes the college curriculum hearing scarcely a reference made to the changes peculiar to age, and having little opportunity to become familiar with the maladies prone to overtake the frame as the years speed onward. He scarcely recalls a reference by one of his teachers to old age, unless suggested in mitigation of the failure of some brilliantly planned, but misguided operation, or equally ill-timed drug treatment.

Surely if the pathology of childhood demands clinical consideration of a special kind such as it now receives in our medical schools, and it be indispensable that it be known from a practical point of view—and this the writer does not question—then is it not equally true that senile pathology with its associated clinical manifestations calls for special consideration at the hands of medical teachers?

In order to make more clear the necessity for this, let us briefly recall some of the more pronounced changes due to age. From birth onward the increase of growth, though undergoing certain variations, gradually diminishes. Com-

mencing at about forty years of age the prime of life declines into old age. The metabolic activity of the body, at first sufficient not only to cover the daily waste, but to add new material, later on is able only to meet the daily wants, and, at last, is too imperfect even to sustain the existing frame. As a result there must follow certain changes in the tissues of the aged of an atrophic and degenerative character. The atrophic changes involve especially the muscles and glands. The cellular elements gradually diminish in size without apparent modification in their structure. The muscular fibres become smaller and more uniform in size; the spleen and lymphatic glands undergo a marked diminution in volume and weight; which increases with advancing years.

In the digestive tract the glandular parts and villi are shrunken. In many instances, however, the glandular elements seem to be those whose powers are longest preserved; and hence the man, who, in the prime of life was a martyr to dyspepsia, by virtue of hypersensitive gastric nerves, finds in his declining years when his nerves are blunted and his peptic cells are permitted to pursue their chemical labor undisturbed by extrinsic nerve storms, that he can eat and drink with the courage and comfort of a boy.

The eye in its prime in childhood, when its media are clearest and its muscular mechanism most mobile, later in life, when it could be of the greatest service to a still active brain, has reached a clouded and rigid old age.

Senile degenerative changes begin somewhat later than the atrophic. The tissues undergo fatty and calcareous changes. These changes are marked in the blood vessels, especially in the cerebral arterioles, also in the voluntary and involuntary muscular fibres. Calcareous deposits occur especially in the tendons, ligaments and cartilages. In the central nervous system the neuroglia tends to predominate over the nervous elements proper, the brain tissue undergoes a chemical change, the fatty constituents are diminished, while the amount of water and phosphorus is increased. As a result, the sensory and motor impulses pass with increasing slowness to and from the central nervous system, and the brain becomes a more and more rigid mass of nervous substance, the molecular lines of which rather mark the history of past action than serve as indications of present potency.

Everywhere we observe a tendency on the part of the living tissue to fall back on the easier task of forming fat rather than to carry on the more difficult task of manufacturing new material like itself. In no part of the body is this more evident than in the arteries. One of the saddest changes of advancing years, because the most fatal, is the conversion of the supple, elastic, arterial tubes into rigid atheromatous channels, whereby the

supply to the various tissues of nutritive material is rendered more and more difficult, and decay hastened. In consideration of the few general changes outlined as the result of age, it is evident that they must very materially modify the manifestation of disease in the aged, as well as its therapy.

For the purpose of illustration and contrast permit me briefly to recall to your minds some of the more important pathological, clinical and therapeutic distinctions between senile and adult pneumonia. To study intelligently diseases of the respiratory organs in advanced life it is necessary to bear in mind some of the more important anatomical and physical changes resulting from age. The thorax loses much of its mobility, due to ossification of the cartilages and atrophy of the muscles. The tracheal rings harden; the bronchial mucosa and muscularis atrophy. The lung tissue becomes attenuated, less vascular and elastic. The cells become dilated, the capillary vessels in part obliterated. In consequence of these changes the breathing of old persons becomes embarrassed and labored, thus impeding their locomotion and enforcing sedentary life.

The pathological changes in senile pneumonia involve the apices by preference in the aged, the base in adults. The inflammatory changes are more often central, and the first and second stages shorter in duration, in the aged, than in adults. The terminal bronchi are invariably involved in the inflammatory process; the pulmonary pleura seldom in the aged; the reverse being the rule in adults. The hepatized lung is lighter and more friable in the aged.

Clinically, senile pneumonia differs essentially from the pneumonia of adults. It commences insidiously and usually runs a latent course; especially is the latter true of intercurrent attacks. The disease is usually initiated by a slight chill, as compared with the sharp chill or rigor of adult age. Old persons seldom complain of pleuritic pain, or dyspnoea, the reverse being the rule with adults. The systemic disturbance, as evidenced by pulse, temperature and respiration, is never so pronounced as in the adult. Expectoration is more tardy, difficult, scanty and less colored than in adults.

The disease is asthenic in the aged; as a rule, the reverse in adults.

The physical signs are modified by the changes in the aged thorax. The percussion note is often one of exaggerated resonance, which slowly gives way to dulness over the affected area.

The auscultatory signs are less positive in advanced life, crepitation being of brief duration or absent, subcrepitant and mucous râles predominating during the first stage. Bronchial breathing, more intense than in adult life, marks the second stage, accompanied by mucous râles, the

latter continuing into the third stage. Surely a disease differing so essentially in its pathological and clinical aspects from that of adult life must require special treatment.

Let us take a second example, a very common affection of the aged, one of special interest to our surgical brethren, hepatic colic. As practitioners we are all familiar with the formidable aspect of hepatic colic in the adult. How different in the aged: slight pain or weight in the right hypochondrium, slight jaundice, perchance nausea, seldom amounting to emesis, accompanied by slight systemic disturbance, make up the clinical picture in the aged.

The preceding brief and imperfect sketch tells us that the progress of age establishes a wide difference in pathological and clinical phenomena by virtue of its physiological modifications. The writer believes that the time is long past due when there should be an awakening in our medical schools to the importance of this subject, and an honest effort made to furnish systematic instruction, both didactic and practical. First, in the normal changes, the result of advanced life. Second, in the diseases peculiar to old age.

It would seem criminal to even suggest the addition of another distinct course to the already over-crowded college curriculum, but I would suggest the following method of expansion:

First, that the chairs of anatomy and physiology impart to the student the necessary primary instruction relative to the normal changes peculiar to old age.

Second, that the chair of practice, or, if deemed best in order to contrast disease, the chair of pædiatrics enlarge its scope and furnish the necessary pathological and clinical instruction so essential to fully equip the student for the responsible duty of intelligently advising and treating the aged.

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Dr. Benjamin Lee, secretary of the Pennsylvania State Board of Health, writing of the early diagnosis of smallpox, says: "The symptoms which should put the practitioner on his guard are: A prodromic period of more than twenty-four hours; the immediate abatement of the prodromic symptoms on the appearance of the eruption; the firm, shot-like sensation conveyed to the finger by the papules; the tendency of the eruption to appear on exposed surfaces to a greater extent than on protected surfaces; the appearance of an areola, however slight, around the vesicle; the persistence of the marks left by the falling off of the scabs for a considerable period of time, and the pigmentation of the marks; the appearance of the pustules within the mouth, on the eye, on the palms of the hands and the soles of the feet are extremely valuable corroborative symptoms."



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220 Broadway, New York City.**OCTOBER 1, 1899.****IS THERE A MENINGITIS EPIDEMIC?**

In the last issue of the Lancet was published an abstract of a paper by the Secretary of the State Board of Health, urging the importance of distinguishing between the true epidemic cerebro-spinal meningitis and sporadic forms of the disease, particularly those complicating such diseases as typhoid fever, la grippe, pneumonia, etc. The paper declared in favor of the view that true epidemic cerebro-spinal meningitis is caused by a specific germ, the diplococcus intracellularis meningitidis, admitting the possibility that it may sometimes be due to the pneumococcus. The importance, from a sanitary standpoint, of distinguishing between the true epidemic disease and other forms was insisted upon; the difficulty is to get the physician to use the necessary care in the differential diagnosis, because from the clinical standpoint it is not of great consequence whether a particular case belongs to the epidemic or to the sporadic form of the disease. Furthermore, as the distinction is a bacteriological one and requires an expert examination either of fluid obtained by lumbar puncture or of specimens obtained post mortem, the differentiation is usually difficult and often impossible.

The paper goes on to say that during the first six months of the present year 117 cases have been reported to the State Board of Health as cerebro-spinal meningitis. Of these, 30 were reported as the epidemic form of the disease while the remaining 87 were unclassified. The author

thinks that probably many cases reported as meningitis are really other diseases. Is it not fair however to assume that this is offset by the cases of meningitis reported as something else? The diagnosis between typhoid fever, for instance, and meningitis is often a most difficult one and there is no apparent reason why mistakes on the side of calling the disease meningitis should preponderate.

One hundred and seventeen cases of meningitis is not an alarming number in six months in a population as large as that of Minnesota. More significant by far is the report of the Commissioner of Health of the city of St. Paul for the year 1898. This report ascribes to meningitis one hundred deaths out of a total of 1,737 for the year. In the list of causes of death meningitis ranks fourth, its death rate being exceeded only by that of pneumonia, tuberculosis and heart disease. Cancer, diphtheria, cholera infantum fall far below it on the list. This is relatively a large death rate from meningitis, perhaps not large enough to constitute an epidemic of the disease but certainly sufficient to indicate its unusual prevalence.

It is now more than a year since cases of meningitis began to be reported with increased frequency and the disease is still unusually prominent although from present appearances it is probably not on the increase. As far as can be learned the epidemic started in Alaska and slowly traveled east and south. Within the last year reports have come from the middle western and southern states of an increased death rate from meningitis, constituting what might be called a mild epidemic of the disease. That true cerebro-spinal meningitis is epidemic according to the standard set by the Secretary of the State Board of Health is much to be doubted. But there is certainly abroad in the land a disease that answers clinically to the description of meningitis, with an eminent fatality as a leading feature. It is indeed a great pity that the cases cannot be studied more thoroughly from the bacteriological standpoint, as in this way lies the best hope of establishing a successful prophylaxis, the only way in which the disease can be successfully fought. It is the duty of every physician who has the opportunity to obtain specimens from a suspicious case to submit them for examination either to a competent local bacteriologist or to

the laboratory of the State Board of Health, where investigations of this kind are constantly in progress.

#### THE DISEASES OF OLD AGE.

In another part of this issue will be found a paper containing a plea for the more systematic study of the physiological and pathological changes that come with advancing years, and of the affections that result from the altered conditions. The writer of the paper argues that since pædiatrics has been given a place as a special branch of medicine, some attention is due to the other end of life which receives no separate recognition in the curriculum of medical schools and almost none in the vast literature of medicine.

The plea is a just one especially in the moderate form in which it is made. Even the extreme to which the specialization of medicine has been carried would hardly warrant the establishment of a chair of the diseases of the old, "presbytiatrics" will do for a name for it, but at least a portion of the course upon general medicine might be devoted to senile disorders. The anatomical and physiological changes would be the first subject of study, and then the pathology would follow. The subject is interesting and its importance grows as each decade brings improvements in hygiene and medical science that lengthen the average duration of human life and increase the relative number of those who live to be old.

The hygiene of old age is relatively of greater importance than that of the earlier years of life, since age has to guard against the same dangers that threaten youth, and in addition has many things to fear that youth need take no account of. Many a man has had several good years cut off from his life because he has tried to save five minutes time by running to catch a street car and has burst a cerebral vessel that would have withstood an ordinary strain for some time yet. Proper instruction as to the hygiene of enlargement of the prostate will do much to mitigate and to postpone the ills that arise from this condition. These are ways in which the properly instructed physician can be of great assistance to his elderly patients in smoothing the path down the hill of life and adding to the comfort of declining years.

## CORRESPONDENCE.

### THE TEN COMMANDMENTS FOR TUBERCULOSIS.

Editor of Northwestern Lancet:

Sir—I enclose herewith a copy of rules which I have formulated, which I give to every tuberculous patient.

Kindly let me know your opinion of the scheme to prevent dissemination of infection. The rules are not original, only a practical utilization of well known rules.

#### THE TEN COMMANDMENTS FOR TUBERCULOSIS.

Hang This Up in Your Room for Reference.

The spread of tuberculosis (consumption) is becoming a grave matter. The following rules intelligently carried out by infected persons will aid physicians in preventing it, and preserving the lives of relatives and friends.

Rule I. Live out of doors as much as possible. Choose a warm, dry equable climate, with dry soil and high as possible, up 3,000 to 6,000 feet.

II. Do not spit upon the ground or floor or around fire place or stove, unless into the fire.

III. Use a spit cup with paper lining, which can be taken out and burned once every 24 hours and cup scalded; or a cloth, size of handkerchief, which should be burned as soon as well soiled, once or twice a day. Cheesecloth cut in squares is inexpensive. These should be carried in a small bag which can be boiled once in 24 hours.

IV. Never swallow sputum. After coughing and raising phlegm, wash mouth with an anti-septic solution. Listerine or Borolyptol, 1 part in 8 parts of water, is very good.

V. Do not sleep in same room with another person, especially children.

VI. It is best, so far as possible, to use your own individual dishes, especially spoons, or those put near the mouth. Place them in boiling water before washing. This can be easily done by having them a different pattern from those used by the family.

VII. Use only your own individual towels and napkins; have them, with all underclothing, boiled, before placing them in the family wash.

VIII. In case of a mother, do not nurse your child, and keep it removed from you as you value its life. Do not kiss a child or other person, lest you infect them.

IX. Do not carpet rooms that you occupy. Have bare floors or rugs which can be taken out of doors and shaken, the operator standing on the windward side, so the infection may be blown from them. (Choose an isolated place for this work.) Moisten bits of paper and scatter over floor before sweeping, then put them into the fire. Instead of dusting, use a cloth moistened in anti-

septic solution for wiping furniture. Bichloride 1-1,000, or a 3 per cent. carbolic solution, is good.

X. Have room thoroughly disinfected every other day, by spray or fumigation. A formaldehyde vaporizer, which your physician or druggist can obtain for you, will answer every purpose.

J. T. MOORE, M. D.

Minneapolis, September 28, 1899.

## BOOK NOTICES.

*The Mechanics of Surgery.* By Charles Truax. Chicago, U. S. A. 1899. [Price, \$4.50].

This book contains a description of the various instruments and appliances used in modern surgery, the furnishing of hospitals, artificial limbs, and allied topics, making a book of over a thousand pages, with more than twenty-three hundred illustrations. It is indeed a completely illustrated, instrument maker's catalogue, barring the price list, but more than that it is fully descriptive of the purpose and method of use of each appliance mentioned, so that the surgeon may order from it with as much confidence as if he had the instrument itself before him.

*A Text-Book of Pharmacology and Therapeutics.* By Arthur R. Cushing, M. A., M. D., Aberd., Professor of Materia Medica and Therapeutics in the University of Michigan, etc. Illustrated. Phila. and New York: Lea Brothers & Co. 1899. [Price, \$3.75, net].

This book is in some respects a new departure as far as publications in the English language are concerned, in that it connects the phenomena produced by drugs on the normal body with their therapeutic effects. In preparing a work of this kind the author acknowledges that he has followed in the footsteps of Schmiedeberg, as shown in the "Grundriss der Arzneimittellehre."

The various substances used in therapeutics are classed according to their action upon the body. First come those acting chiefly locally; then organic substances, grouped according to their action after absorption; then come the various salts, acids and metals; then ferments, secretions and toxalbumens; finally mechanical remedies. The physiological action of the drug is first studied and then its therapeutic use, the various preparations being named in full.

*A Text-Book of Diseases of the Nose and Throat.*

By D. Braden Kyle, M. D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College; etc. Illustrated. Phila.: W. B. Saunders, 1899. [Price, \$4.00, net].

Written in a clear and direct style, this book is admirably adapted for the use of the student or general practitioner no less than for those who

propose to limit themselves to the treatment of diseases of the throat and nose. The work makes no claim to great originality, but has a right to be called an excellently arranged description of the various diseases of which it treats, classed according to their pathological features.

One original feature, however, is entitled to mention and that is the illustrations, many of which are made from specimens out of the author's own collection. There are also a number of photographs and drawings of diseased conditions taken from life and adding greatly to the value and interest of the book.

*The Treatment of Pelvic Inflammations Through the Vagina.* By William R. Pryor, M. D., Professor of Gynæcology, New York Polyclinic; etc. Illustrated. Phila.: W. B. Saunders, 1899. [Price, \$2.00, net].

The writer's views upon the proper treatment of the various pelvic diseases of women are pronounced and he declares them without hesitation. The measures that he advises are vigorous ones; for instance in endometritis, both acute and chronic, he goes on at once to curettage if he thinks the disease has penetrated the superficial layers of the mucous membrane, and in all septic cases he opens and drains the cul de sac whenever he cures the uterus. Many gynæcologists on the other hand hesitate to curette the uterus in the presence of active inflammation of the adnexæ.

Although the book is primarily devoted to treatment it has something to say about the clinical and pathological history of the diseases of which it treats and further enlightens the reader by the use of many available illustrations.

*Manual of Diseases of the Nose and Throat.* By Cornelius Godfrey Coakley, A. M., M. D., Clinical Professor of Laryngology in the University and Bellevue Hospital Medical College, New York City; etc. Illustrated. New York and Philadelphia: Lea Brothers & Co., 1899. [Price, \$2.75, net].

In order to bring this manual down to a small size and convenient form it has been limited principally to a consideration of the more practical sides of the diseases treated of, that is to examination, diagnosis and treatment. This has been done, however, without in any way slighting the topics discussed or giving to the work the appearance of too much concentration. Furthermore the specialist will find in it much that will assist him by adding to his stock of knowledge upon diseases of the nose and throat.

*The Hygiene of Transmissible Diseases.* By A. C. Abbott, M. D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Illustrated. Philadelphia: W. B. Saunders, 1899. [Price, \$2.00 net].

To those who are familiar with the excellence of Dr. Abbott's work on bacteriology, it will be no surprise to find his new book something quite out of the common run, and in fact, one of the most interesting and novel works of the present year.

While causation and prophylaxis form part of the history of every disease in works on general medicine, these are subjects that are often dismissed in a paragraph, while in this book they are the main topics for consideration, and the reader learns in an interesting manner the latest views as to how diseases are caused, how they are disseminated and what are the best measures to take in order to avoid infection. The matter of prophylaxis indeed becomes one of far superior importance to that of treatment with such diseases as tetanus and glanders, which are practically hopeless when once established.

It is to be supposed that Dr. Abbott, being a bacteriologist, would pronounce in favor of a bacteriological cause for all transmissible diseases, even where the specific germ has not been isolated. The assumption would certainly be a pardonable one, but the author shows conservatism by declining to assign a cause to diseases like varicella and measles, with which no known germ has been associated.

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## MISCELLANY.

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### THE OCTOBER MAGAZINES.

The Atlantic opens with an unusually able and thoughtful paper by President Eliot, on "Recent Changes in Secondary Education;" and this article is followed by one on "The United States and Rome," which must attract wide attention, for in it Mr. Sedgwick points out the probably future influence of the Catholic Church in America. Jacob A. Riis continues his discussion of the tenement house problem, dealing in the present article with parks and play grounds for the poor. Thomas Wentworth Higginson contributes one of his delightful sketches, which tells of the experience of Englishmen in America and Americans in England.

The serial "To Have and To Hold," which is now running in the Atlantic, has attracted wide attention, because of its real power and beauty.

The editor of the Review of Reviews analyzes the South African situation, comments on the Dreyfus trial, reviews the work of the Chicago conference on trusts, and discusses Mr. Bryan's position on the silver question and the general political issues in the State campaigns now in progress. The issue also contains many valuable contributions of special and timely interest, such, for instance, as Ex-Postmaster General James' article on "The New Era of Prosperity," and Dr. E. Benjamin Andrew's comments on "Trusts," etc.

Scribner's opens with a beautifully illustrated article on "The Water-Front of New York," but its most interesting contribution is from the pen of Prof. Dwight L. Elmendorf, who writes of the new science of distant photography, which produces results hitherto unobtainable. The science combines the camera and the telescope, and thus obtains accurate pictures at the distance of many miles. With improved apparatus it is hoped that all animals in motion may be photographed and if so, we shall soon know more of that interesting subject, the flight of birds. Mr. E. M. Royle gives a minute and a valuable description of "The Vaudeville Theatre," an institution purely American, and very dear to American hearts. The entire issue, from cover to cover, is a handsome and interesting one.

The Cosmopolitan has made a ten-strike, if not two of them, in its current issue, and we have no doubt that the edition will have to be duplicated more than once. In it Mark Twain deals with Christian Science, and the highest praise that can be given his article is to say that he deals with it adequately. We doubt if another man in America could have done the same. The article is half serious and half humorous, but it is perfectly fair. It annihilates all arguments for Christian Science as put forth by its founders, while admitting the influence of mind upon the body in producing certain cures. Everybody is talking about the article. Also of much interest to physicians is the prize essay on "The Care of Young Children," by Dr. Helen O. Anderson. An article on candy making at home, with recipes and instructions, will be enjoyed by the young folks. The entire number is a magnificent one.

Lippincott contains, besides its regular novel, an article on "Zionism," by Zangwill; "The Home of Gilbert White of Selborne;" "Scottish Sports and Autumn House Parties;" "The Common Insects of Autumn;" "The Biggest Little Fight in Naval History," that of Commodore Decatur; etc.

The Ladies' Home Journal contains an editorial that even the busy doctor will turn aside to read, for it protests against the negligence which so many people fall into in the matter of the payment of physicians' fees. Admiral Dewey is the famous man who is treated this month in the Journal's series, and the new and authentic stories make the article pleasant reading. Franklyn Fyles, the dramatic editor of the New York Sun, opens an important series, "The Theatre and Its People," in which he proposes to tell the public all about the stage, from the process of writing a play to the minutest detail of its staging. The Journal has departments of the greatest interest to home life, and they are filled with the best writing to be had in the world.

The Living Age grows better every year. It contains so much that is good, we can refer only to an occasional article. For instance, the story of "Dame Fast and Petter Nord," now running as a serial gives American readers their first opportunity to become acquainted with the brilliant Swedish writer, Selma Lagerlöf. M. Jules Claretie's recent lecture on "Shakespeare and Moliere" is published in full in the issue for Sept. 16, and is an extremely interesting appreciation and comparison of the two great dramatists. The issue for Sept. 30 has for its leading article the last contribution which the lamented M. Victor Cherbuliez made to the *Revue des Mondes* over his familiar signature "G. Valbert." The subject is "The Colonial Principles of an American Naturalist." In the following number will be printed M. Ferdinand Brunetiere's funeral oration over M. Cherbuliez.

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## NOTES.

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### The Working Tools of the Craft.

Coincident with the onward progress of the medical art has been the advance in our knowledge of the cause of disease. As the practice of medicine and surgery has gradually but surely emerged from the darkness of charlatanism and empiricism and approached more nearly to the dignity of a science, the pressing demand for better facilities and better "working tools," has been met alike by the skillful instrument maker and the modern expert pharmaceutical chemist. The surgeon of to-day has at his command a full armamentarium of ingenious instruments of precision, cunningly devised for certain specific purposes and upon which he can confidently depend. The modern physician also has been furnished with therapeutic instruments of precision, originated by the physiological chemist as a result of the close study of Nature's laws and elaborated and perfected by expert pharmaceutical skill. Contrast for a moment the "working tools" of the physician of a hundred years ago with those of the practitioner of to-day; the bolus and nauseous decoction as against the dainty tablet and the palatable elixir. Up to this point the modern surgeon possesses no advantage over his medical confrere as far as his "working tools" are concerned; but here the parallel ceases. The surgeon, when he needs a new scalpel for an important operation, examines the stock of a reputable dealer and personally selects an instrument of the best quality obtainable. He sees it, handles it, and assures himself that it is well made and properly tempered. If perchance the knife is not as represented he soon discovers it, and promptly discards it for one which is more satisfactory and reliable. The surgeon not only personally selects, but personally employs his

instruments, and therefore cannot be deceived in them. But how about the equally important "working tools" of the physician, i. e., the remedies which he orders for his patients? After a series of careful clinical experiments with various remedies of a certain character he comes to the deliberate conclusion that one particular preparation gives him the best therapeutic results and that it will hereafter become one of his trusted "working tools." Take for instance Pepto-Mangan "Gude," the value of which almost every modern practitioner is now familiar with. The physician has learned from experience just what this particular remedy will accomplish; he knows its advantages, limitations, indications and dosage, and prescribes it in properly selected cases, with full confidence in its action and effects. Just here, however, the physician loses control of his "working tool" unless he is positively certain that his prescription will be filled exactly as specified. It is, of course, manifestly impossible for the busy physician to personally follow up every prescription in order to assure himself that some inferior and more or less worthless substitute is not dispensed in place of the article prescribed, and he must therefore adopt some other means to prevent this reprehensible practice. There are three ways in which the physician can protect himself and his patient against this unwarranted, inexcusable and dishonest interference: (1) Let him be certain that his prescriptions are filled only by pharmacists known to him to be above such disreputable catchpenny practices. (2) Specify plainly and unmistakably the particular preparations desired. (3) When possible order an original unbroken package. We feel strongly about this very common and nefarious practice of substitution, which is injurious alike to the welfare of the patient and the reputation of the physician, to say nothing about the injustice to the reputable manufacturers, who have spent brains, time and money in putting valuable and eminently eligible "working tools" into the hands of the profession.—Editorial in *Dominion Medical Monthly*, Toronto.

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### A Famous Expression.

Prof. Gibson, one of the pioneers in the development of scientific medical teaching in the United States, was asked, by one of his students at the University of Pennsylvania, how to obtain a comprehensive, accurate knowledge of medicine that would enable the physician to make a correct diagnosis, and execute proper treatment. Dr. Gibson's reply has become inseparably connected with his name and memory. It was "Principles, principles, principles." By this, of course, was meant that however varied were the manifestations of disease, they were to be comprehensively grasped only by a knowledge of the

fundamental principles of physiology, pathology and therapeutics. The symptoms of disease, however manifold, could be intelligently interpreted only on this philosophic basis. Strictly consistent with this inexorable law is the fact that all conditions of depression and exhaustion of the system can be appropriately and effectively treated only by re-awakening the dormant and torpid nutritive functions. The crying need of the emaciated tissues and impaired vital functions is for food, the natural restorative. In most cases, however, there is not only an indisposition to take food, but the digestive organs are so enfeebled that they cannot digest and assimilate food—their functions are suspended.

The first indispensable step is to restore these functions. The ordinary tonics—iron, arsenic, strychnine, hypophosphites, etc.—fail entirely to accomplish this object. Cod liver oil is the heaviest burden on even the strongest digestive powers to prepare for assimilation; on the atonic stomach it is an irritant—it aggravates the existing trouble. The digestive organs must be gradually coaxed into a condition of restored functions; they need stomachic alternatives, tonics and stimulants.

The best of these, as proven by experience, is Gray's Glycerine Tonic Comp. It has a specific, selective action upon the atonic digestive organs; it not only enables them to digest food, but it invariably promotes assimilation, so that reconstruction of wasted tissues and nervous force is absolutely assured. For this reason Gray's Glycerine Tonic Comp. is the most rational, scientific and effective remedy in all conditions of malnutrition, anæmia and nervous exhaustion, occurring either independently as a consequence of organic disease, such as tuberculosis, Bright's disease, or as the result of acute infectious diseases.

#### Latent Rheumatic Conditions.

The physician is frequently called upon to treat patients, who though not ill enough to be in bed are not at all well. Their appetite is capricious, they sleep indifferently, or even if they sleep soundly they are not refreshed and in the morning they are more fatigued and ill at ease than was the case on retiring. Upon awakening there is frequently an aching sensation in the loins, sometimes in the lower limbs, which is noticed upon getting out of bed or in dressing, particularly in putting on their hose or in lacing their shoes. As the day progresses this soreness may partially wear off, but there is at all times a vague, undefined, uneasy, painful feeling.

A competent examination of the urine in these cases will in almost every instance be found to disclose a notable absence of the soluble urates. On the contrary, it may be loaded with the phosphates and very frequently bile will be pres-

ent as also uric acid. If the condition remains neglected, the probable results will be sooner or later a pronounced attack of rheumatism in one or another of its forms. All that is needed to induce such a condition is a sudden change in the weather or exposure on the part of the patient to cold or wet or a combination of the two. This is due to a latent rheumatic diathesis, to which every adult is liable.

In such cases the physician will find Tongaline in any one of its forms, as indicated, given at short intervals with copious draughts of hot water, a remedy which goes directly to the source of the trouble. Tongaline seeks out the retained excretions or perverted secretions, which it either neutralizes or renders amenable to the physiological action of the emunctories, and then it brings to bear its strong eliminating powers, correcting the complaint promptly and thoroughly.

#### Sanmetto for Developing Comeliness of Form..

I confess that I have used Sanmetto for years and always with excellent satisfaction to myself and patients. This case for which I ordered Sanmetto was on the experimental order. Young lady, about twenty-one and contemplating marriage, to her exceeding sorrow she had practically no bust development whatever. I wanted to know whether Sanmetto would have any decided effect upon the mammary glands or not. She has taken one and one-half bottles, and bust measure has increased over one inch. The bosom though small is now well formed and firm.—J. F. Locke, M. D., Commander E. T. Wood Post No. 100, G. A. R.  
Long Prairie, Minn.

#### A Report from the Rensselaer County Hospital.

"Having used Micajah's uterine wafers for the past five years in a great number of cases of prolapsus uteri, and not failing to cure each case treated with them, I have discarded the use of all pessaries and place my sole reliance upon the wafers with the result above mentioned. They are worthy of a trial by every practitioner."—M. A. Wheeler, M. D., Troy, N. Y., Physician and Surgeon to Rensselaer County Hospital.

Dr. Nicholas Senn asserts that an army surgeon requires more courage in a fever camp than on the battlefield. The London Lancet agrees with this, and adds that to the eye of scientific faith the microbes are not less real than the Maxims, and are certainly not less deadly; moreover, they have to be faced day and night, for weeks and months, instead of for a few breathless minutes. Decidedly, the "non-combatant" is the greater hero.

## ORIGINAL ARTICLES.

## UREA.—ITS CLINICAL IMPORTANCE.\*

BY D. EDMUND SMITH, A. M., M. D.,

Minneapolis.

The tendency of the professional mind is towards the more accurate and simple means of diagnosis and a more careful knowledge of the causal factors of the pathological conditions present. Accurate knowledge of the chemical constituents of food, air and water, and their relation to the human economy, render better results in the treatment and prevention of disease.

While the laboratories of bacteriology and chemistry furnish knowledge of some new toxins or ptomaines arising from some unsuspected source, little attention is paid by the practitioner and surgeon to a waste product which has a marked bearing even to a fatal termination in a goodly proportion of patients. This product is constantly produced in the metabolism of every organism wherever there are changes in proteid matter.

The daily average production of urea in man has very little variation, eliminating about one ounce in twenty-four hours. Urea is a violent poison, having many of the clinical aspects of poisoning from morphine accompanied by the convulsive muscular phenomena of strychnia.

The human economy generates enough in eight hours to render life extinct. It is upon the elimination of this poison that life depends, and the non-elimination of it presents many clinical conditions, from the slight dizzy headache to the uræmic coma and fatal eclampsia.

Urea contains nitrogen, which takes such an important place in the composition of toxins and ptomaines. It bears a striking relation to many conditions, and yet how few watch the elimination of such a poison. A knowledge of its chemical constituents and its formation will help materially in the methods of elimination. It is an isomer of ammonium cyanate, and was first produced synthetically by Wöhler, in 1828. It is interesting to note that this was the first synthetic preparation of any material usually elaborated by the animal body (Sheridan Lea). While never seen under the microscope in normal urine, urea is precipitated in long, silky, four-sided prisms with pyramidal ends, by evaporating urine and saturating it in alcohol, or by adding oxalic acid, concentrating, filtering and then extracting it with calcium carbonate in a watery solution. There are several other methods of

greater or less complication used by Compañier, Liebig and others. It is anhydrous and soluble in cold water and hot alcohol. It is prepared for administration today by the admixture of ammonium sulphate and potassium cyanate extracted with alcohol. Little is known of the processes through which proteid or albuminoid substances pass before they appear in urine as the poisonous excrement. One-eighth of the toxicity of the urine, according to Parks, is due to urea. Bouchard claims, however, that it is not as toxic as sugar, yet its activity is due to the large quantity produced making about one-half of the total solids of the urine.

Until quite recently the kidneys were supposed to be the laboratories for its production, but Prévost and Dumas removed the kidneys from many animals and the production of urea continued. It was a long time before proof was given that the liver and possibly the other secreting glands was the source of the change. Even when Maisner made the discovery, it was hotly contested by many investigators. The theories offered by Lea and Hoppe-Seyler and Yeo are nearly identical, and are now generally accepted as the most rational. Pflüger's idea is that cyanic acid, having great molecular energy, is supposed to have its effects in a functional metabolism of protoplasm, and is found as the cyanate of ammonium in nitrogenous, living tissues, and as urea or dehydrated cyanate of ammonium in dead proteids or tissues. When living protoplasm has served its purpose in glandular structure, blood and general tissue catabolism, urea is found in the dead or effete protoplasm where cyanic acid was present in its active stage. Cyanic acid denotes force; urea represents the changes occurring in protoplasm from life to death. Yet just how this elaboration occurs it is impossible to demonstrate. Hoppe-Seyler, whose contributions to the subject are considered the best, agrees with Pflüger. Yeo's recent work enlarged and much more accurate and comprehensive than at first, offered the following theory: There are two forms of albumen in the system, the organized and circulating. Organized albumen is found in all the tissues of the body but in large quantity in glandular structure, where tissue metabolism occurs. Circulating albumen in the blood and body fluids under the effects of cellular elements of the tissue undergoes unknown transformation into urea. Urea according to him is the product of glandular activity. Uric acid, hippuric acid, creatin, etc., are considered intermediate stages from protoplasm to urea, but the stages are unknown.

Smeideberg discovered that he could form urea by forcing the blood of a full fed animal

\*Read in the Section of Medicine of the Minnesota State Medical Society, June 21, 1899.

through the liver. By subjecting the blood of a starving animal to the same process he obtained urea, but not without the addition of ammonium carbonate. Hence he claims, with good grounds, that it is the ammonium carbonate from the digested proteids which is dehydrated into urea. This fact will be of importance in the therapeutics.

Dreschel generated urea from the carbonate of ammonia outside of the body, and he goes a step farther saying that carbamate is a later step than the carbonate of ammonium. A uniform amount of urea is eliminated daily. Thompson and Yeo do not agree with other writers when they say that the increased amount of urea proceeds from an increased ingestion of nitrogenous food. Last year a party of investigators, after feeding for five weeks exclusively on sweet-breads, one of the most highly nitrogenous proteid foods, states that the proportionate percent of urea eliminated by the kidneys was not increased. Lea, of Cambridge says the same, viz: that only a certain percentage, enough for tissue metabolism is taken into the system, and that the increased production of urea is due to the breaking down of tissue. Halliburton says, urea must come from the destruction of tissue, not from increased food, and cites the pathological condition of fever. Urea is increased in fevers because there is greater destruction of protoplasm during that time. In other words the organized albumens of Yeo are rendered less stable. Urea is increased in the urine of pneumonia patients for some time after the fever disappears, because the system is throwing off the albuminates used in the production of fever. The liver receiving broken down protoplasm from the blood current divides it into its elements and (in the same cell, as far as the microscope is able to differentiate) converts it into bile and urea.

Thus we see how it happens that there is an increased percentage of urea in functional anæmias. When these liver cells are destroyed by lardaceous or cirrhotic conditions, urea is in corresponding degree lessened and ammonia appears in the urine, corroborating the carbonate of ammonium theory of Smeideberg and Dreschel. Muscular activity does not increase the quantity of urea because the albuminates do not enter directly into the composition of muscle tissue. The production of urea in those of the uric acid diathesis is lessened on the supposition of Hammarsten that uric acid is one of the intermediary stages of urea formation and because of the imperfect combustion is stored in the system as uric acid. It may be possible that the liver, over worked or functionally weakened, is the primary cause of rheumatism, gout and its congeners. The percentage of urea is much lessened in the neurasthenic and often marked improvement follows the stimulation of liver activity and the elimination of this insidious nerve poison.

Parks call attention to the pale urines. The less the coloring matter in the urine, the less poisonous it is, yet the greater is the danger to the patient who is retaining rather than eliminating the poison. In uræmia the urea almost entirely disappears from the urine. This general rule is one that should help in diagnosis. The paler the urine the greater the danger to the patient.

Rose Bradfords, of England found that he could remove one kidney with no bad results, and he then continued until he found that one-third of the remaining kidney could be removed. Beyond that point the animal died of uræmia. In the autopsies of those dying from uræmia, where the kidneys had failed to eliminate what the liver produced, he found that only about a third of the kidney structure was doing the entire work. When a chronic interstitial or an acute nephritis occurs, close attention to the elimination of the urea will aid materially in the therapeutics. When the percentage begins to fall the other eliminatory organs must be stimulated. Older writers say that the perspiration contains a barely perceptible percentage of urea, but we find that the skin eliminates eight-tenths of one per cent of the total urea, while the hair, nails and moisture from the breath add a largely perceptible amount. Under stimulation these organs may produce large quantities. So willingly does the skin try to assist the kidneys, that in the later stages of uræmia the body and hair are often covered with fine white scales and plates of urea crystals. By proper attention to the skin, life may be prolonged many years where there is a defective elimination of urea. The portable steam and hot air baths are so beneficial because they eliminate large quantities of this poison and the patient is not subjected to the dangers of exposure attendant upon leaving a Turkish bath.

Ether will dissolve while chloroform will precipitate urea. Chloroform during anæsthesia is to some degree absorbed into the blood and has a destructive action on the red blood corpuscles. The activity of the liver is increased to clear away the detritus forming bile and urea. An extra amount of work is thrown upon the kidneys which they are unable to perform, and the poisonous urea remains in the blood overpowering the already weakened system. Excessive formation of bile occurs at the same time, which the system tries to throw off by vomiting. Greater care paid to the activity of the liver and kidneys before and after anæsthesia would lessen many of the post-operative conditions and fewer deaths from urea would fill our records.

Very close watch of the urea percentage will tell when danger is threatening, and treatment by saline injection, protonuclein and strychnine solution hypodermatically, hot packs to produce



copious perspiration and thorough saline catharsis, should be resorted to.

But before speaking of that condition in which the estimation of urea is of vital importance and which allows us to carry a pregnancy to a successful termination, by means of which we are able to know when an eclamptic storm threatens and whether or not the life of the child is to be sacrificed to the future health and life of the mother, before taking up the subject of eclampsia, allow me to describe a very simple and fairly accurate means of the estimation of urea. For the exact estimation of urea, the complicated methods of Pflüger and Liebig, in which mercuric nitrate was used, after the urine had been freed of chlorides and other substances affecting reaction. Bunsen and Von Jaksch and the barium carbonate processes, require a long time and much care and laboratory technique. But a simple method was devised by Knop-Hufner, which although not scientifically correct is yet sufficiently accurate to be of immense service to the busy clinician. It is based upon the fact that in the presence of hypobromite of sodium urea splits up into carbonic acid gas and nitrogen, a given amount of urea always producing a stated amount of nitrogen. The measure of nitrogen shows the amount of poison eliminated. One great difficulty has been that the solution of hypobromide of sodium is unstable and becomes useless after about two weeks. Its preparation is difficult and is attended with a great deal of annoyance.

Seventy cc of sodium hydrate are dissolved in one hundred and eighty cc of water; after it has cooled, five cc of bromine are added and the whole is kept in a dark, cool place in a glass stoppered bottle. The bromine evaporates so rapidly and is so intensely irritating to the mucous membranes that one runs considerable risk in using it. Dr. A. W. Abbott, of Minneapolis, made a much simpler and stabler preparation of the hypobromite of sodium which lasts for several months. A bottle of Squibbs chlorinated solution of soda, familiarly known as Labarraque's solution is opened, and sufficient of the bromide of sodium is poured in to make a supersaturated solution. This is kept in a dark colored bottle. Doremus has invented an instrument for estimating the quantity of nitrogen. A pipette containing 1 cc of urine is put in the neck of the instrument, and as the urine comes in contact with the hypobromite solution, nitrogen and carbonic acid gas are formed. The latter is absorbed in a form of carbonate of sodium and leaves nitrogen free which collects at the top of the tube. This tube is graduated and the amount of urea in a cc of urine is measured. By multiplying the reading by 100, the percentage of urea is obtained. Knowing the amount of urine voided in twenty-four hours, and knowing the percentage of one

unit of urine the total quantity is quickly found. A much more simple method is to assume that the quantity in twenty-four hours is approximately the same. We then judge only by the percentage and the scale can be read as one per cent. or two per cent. with decimal intervals. This simplifies the process, making it almost as easy and rapid as taking the specific gravity. In a normal patient the percentage is between one and four-tenths and one and nine-tenths.

There are certain premonitory symptoms which in eclampsia may be of service in watching a patient's condition. The urine of every pregnant woman should be examined at regular intervals. Beside the ordinary data regarding albumen, sugar, pus, blood, one very important step is to examine for the percentage of urea. Especially should the neurotic and anæmic, whose eliminatory functions share the same depression as the mental conditions, be watched. Davis claims that there is no cause for alarm as long as the patient has a daily excretory power of one and four-tenths per cent. urea. However, when the percentage decreases below that standard, the other conditions remaining the same, there is danger of an uræmic storm. Albumen may or may not be present. In about five per cent. of all cases of pregnancy serum albumen may be found, gradually increasing to 71 per cent. during the last four weeks. It is of little pathological importance, acting however, as a warning to keep the patient as free as possible from any extra kidney strain, thus preventing what Davis is pleased to term, sudden kidney failure. But when a descending percentage of urea accompanies an increasing amount of albumen, treatment should be adopted immediately. While a large percentage of this class after delivery may become nephritic, it is not necessarily the case that Bright's disease will develop. If albumen appears during gestation the urine should be examined microscopically and carefully watched from time to time for casts. If albuminuria is accompanied by casts it is then an evidence of nephritis. Even in this class of cases, the danger although greater, is not necessarily fatal, and post delivery Bright's need not follow. It is in those cases where an abundance of casts, hyaline, epithelial and granular is present, that there is a certainty of progressive interstitial nephritis. Such patients as well as those afflicted with glycosuria die of uræmic coma. But when the patient has an abundance of casts and a percentage below one per cent. of urea, it is then that active treatment should be resorted to. The question of immediate delivery in order to save the mother, with a possibility of saving the child, does not come up for decision until one other question is decided. The quantity of urine may be more than the usual 1,500 c.c. and the percentage of

urea low. In such a case the usual quantity of urea is eliminated. It must be remembered that it is the quantity of urea remaining in the system that does the harm. The foetus eliminates effete matter and this in some way is thrown upon the mother to eliminate. So by removing the child which is a source of an extra amount of toxine, the patient soon recovers her urea equilibrium. This rule may be safely followed when it is impossible to increase the amount of urea when the percentage remains below nine-tenths per cent. If the percentage of urea is below nine-tenths per cent. and the urine in twenty-four hours less than 20 oz., containing albumen with casts and evidences of toxæmia are present in headache, nervousness and blind spots, then in order not to lose both mother and child, the radical measures of emptying the uterine contents should be resorted to immediately. When the urea is above one and four-tenths per cent. the patient can be safely carried to full time in the presence of albuminuria even with casts.

In the treatment of cases with such defective elimination, diet is of supreme importance. The ideal food for such as can take it, is milk. This may be diversified by the use of cream, whey, buttermilk, porridges, ice cream and other foods composed almost entirely of milk. Bauer found gelatine to act remarkably well, for by the increased ingestion of nitrogen there is a greater excretion of urea. Because of its diuretic action, causing increased thirst, Yeo recommends it very highly in the form of puddings, soups, etc., made from gelatin-bearing joints. Next, fresh vegetables, especially spinach, lettuce, celery, beans and peas. Fish and the white portions of chickens and some game birds. Breads made of whole wheat, shredded wheat biscuit and gluten crackers are to be used in the place of white bread, pastry, hot biscuits or any preparation of fine flour. The term "butcher's meat" may be used to designate the restricted meats of pork, veal, mutton, fats and raw meats. Tea is injurious because of its constipating action, retarding elimination. Coffee, chocolate and cocoa because of the extra work thrown upon the liver. Although the potassium salts are markedly diuretic, because of their irritating action on kidney structures, should never be prescribed in any form where there is an involvement of the kidney. Among the drugs used Halliburton says urea is increased by the administration of sulphuric acid, potassium chloride, ammonium salts, phosphorus, arsenic, antimony, morphine and codeine. Voit used cold applications, while Schleich used hot baths and Frankel gave inhalations of oxygen. The writer finds that in many cases the amount of urea is increased by the stimulation or

feeding of the nerve structures by arsenic, strychnine, hypophosphates and animal extracts. It has been noticed that uræmic headaches and uræmic blindness often appear in the neurotic where the urea equilibrium is upset by mental emotion.

An alternating treatment of sodium phosphate for a period of ten days followed for the same length of time by dilute sulphuric acid is beneficial. Arsenic, iron, strychnia, Basham's mixture are material helps in the accumulating, progressive, uræmic tendency. When we are confronted with an eclamptic storm in all of its rapidity and force, very radical means must be used. Every means to produce rapid elimination, without destroying resistible powers, is desirable. Except in the very plethoric, where there is marked congestion, bleeding should not be resorted to, because although the toxic substances may be removed there is no reason why the rapidly forming new blood may not absorb and contain toxines. For the same reason veratrum viride is dangerous except where the blood pressure is to be relieved. Many practitioners favor pilocarpine. If the heart is bounding and strong, while the muscle and valves are intact, which is unusual, pilocarpine is a valuable adjunct, but its depressing action upon the heart renders it extremely unsafe in routine practice. Calomel in 20 grain doses has a double and remarkably efficiency. First in its diuretic and secondly its cathartic action. Hot packs with copious draughts of hot water are very much aided by a large amount of normal salt solution, even to the amount of three quarts, in severe cases given hypodermatically. Although hypodermoclysis has been but little used in eclampsia, yet very satisfactory reports are given where it has been used. It is astonishing how much the skin can be made to hold. A very effective hot pack is made by wrapping the patient in a heavy blanket, covered by a rubber sheet or impervious quilt. Several bricks heated in an oven are wrapped in woolen and are placed under the coverings, near but not touching the patient. A twenty per cent. watery solution of alcohol is then poured over each brick, an ounce or two at a time and in a few minutes a copious perspiration follows. The objection to it is the danger of burns, if the patient is unconscious, as the hot moisture macerates tissue very rapidly. Strychnia and digitalin fortified by nitroglycerine should be used to sustain the heart. The question of treating uræmic subjects with glandular extracts is yet in its incipency. Yet seeing that uræmia is the result of retained proteid katabolism, a drug that can replace that lost glandular material would be ideal. It remains to be proven whether these glandular extracts can have that effect or not.

## SOME INFLAMMATORY DISEASES OF BONES, WITH REPORT OF CASES.\*

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There are but few diseases of the human system that require greater skill in diagnosis, earlier and more vigorous treatment than bone inflammations. To the lack of knowledge of the medical attendant as regards the pathology and treatment of these cases may be charged the loss of useful members of the body and not a few lives perhaps. The average practitioner is apt to make a diagnosis of some other than to hit upon the real disease. When we become more familiar with this branch of surgery earlier and proper treatment will be given and better results obtained. It is not the intention of the writer to review the entire subject of bone inflammations but merely to bring before you its practical side by the report of a few typical cases.

Of the various inflammatory diseases of the bone, acute suppurative osteomyelitis is the most important. In this variety the surgeon does not have the opportunity to change his diagnosis many times before his patient has reached a stage where there is little or no help. He must decide and act quickly. While in the other varieties he may take more time, and will, invariably, in the end, make a correct analysis of the case; even though the symptoms are so much more pronounced in the acute form it seems the harder to recognize on account of its resemblance to other acute inflammations or febrile diseases.

Holmes has aptly stated that acute, suppurative osteomyelitis is more frequently recognized post mortem than at the bedside. How often do physicians make a provisional diagnosis of rheumatism in swollen joints, of periostitis following an injury or even typhoid fever or meningitis in cases that have reached that stage where a general infection has occurred, producing delirium or even coma.

The streptococcus and staphylococcus are the chief causes of acute osteomyelitis. Tubercular inflammations are as a rule less severe and are more chronic. The pneumococcus, typhoid bacillus, colon bacillus and other miscellaneous infections are other causes. Both inflammations result from absorptions of these various bacilli by local or general infection, which fact will be brought out in connection with the cases reported below. The variety due to the streptococcus is most severe. Direct injuries result in a *locus minoris resistentiæ* and are secondary factors in the development of oste-

omyelitis. Senn believes that exposure to cold is a frequent cause for the beginning of bone disease. It is often a complication or sequelæ of other diseases. There are other cases where there seems to be no known cause for the disease, but it comes on as an acute suppurative or chronic inflammatory trouble. Old inflammatory foci are liable to take on an acute exacerbation of the disease as a result of injuries, general diseases or a low state of vitality of the system, which causes the encapsulated germs to renew their activity.

The primary attack is classed as circumscribed, chronic, suppurative osteomyelitis. During many of these attacks few symptoms are pronounced, there being very little fever, swelling or pain, resolution taking place by the pus having found an outlet externally before the contiguous structures are affected. In these recurrent attacks or perhaps in the acute suppurative variety when the disease is located near a joint, suppurative arthritis may occur as in case VI; the pus following the line of least resistance breaks into the joint or burrows under periosteum and among the muscles surrounding the bone. In these cases pronounced systemic symptoms of infection supervene, as high fever, chills, profuse sweating, delirium and even coma. Pyæmia or a typhoid condition and at times a meningitis occur.

Acute tubercular osteomyelitis has received but little attention in the past, as it was not differentiated from the acute suppurative variety. The symptoms are nearly the same but less painful; at times a general tuberculosis or pulmonary disease results. Case II may be classed in this variety. Chronic osteomyelitis is the most common form, the symptoms of which we are all familiar with, having seen it often illustrated in Potts' disease and ordinary hip joint trouble.

Children are prone to develop what is known as epiphysitis, the bones of the hip and knee being most often affected, while adults are subject to attacks of acute osteomyelitis of the long bones as a rule, although the writer has found the tarsal bones commonly affected first. In an unpublished article by Dr. J. E. Moore on acute suppurative arthritis of children are many valuable points to be gained. He believes these cases have often been overlooked by the profession, and occur as either complications or sequels of the exanthemata, fevers and other disease, but due directly to poisonous germs.

Syphilitic disease of bone is quite common, especially of the cranium; it may also occur in individuals, who have contracted syphilis, from an injury, as the exciting cause, in other bones. Tubercular inflammations are associated with this variety occasionally, or where an external opening exists mixed infection is liable to occur. It runs a protracted course and operative pro-

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cedures are of little or no aid without internal medication.

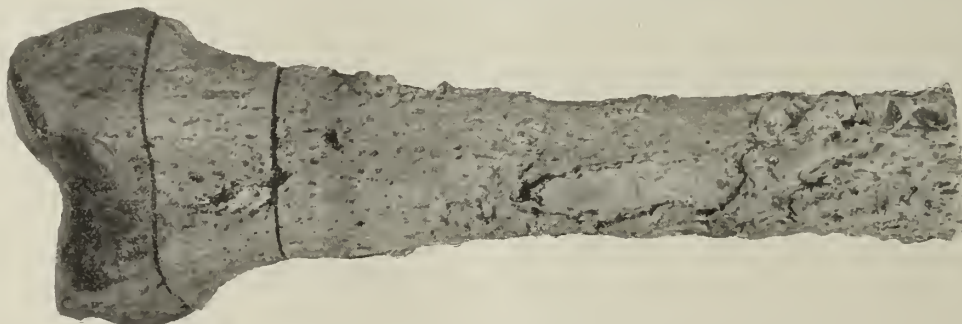
The diagnosis of bone inflammation should be made by a careful study of the history of the case. We are able, I believe, in the majority of patients, to exclude similar diseases and even though there be not positive signs of an inflammatory disease of the bone, it is the opinion of the writer that little harm can be done by an early operation for examination of the apparently diseased portion of the bone. If healthy, repair soon takes place. If diseased we have by this early and radical operation relieved our patient of pain, lessened the period of recovery and possibly, by our timely energy, saved a limb or life.

The operation should always be most thorough and the wound is best treated subsequently by various remedies, as boracic acid, iodoform emulsion, gauze, balsam of Peru, etc. Alternating with these several local remedies seem to bring about a more speedy result.

The following cases will illustrate several of the varieties of bone inflammation already mentioned.

tient's health failed rapidly at first, she became emaciated and the night sweats were profuse. Creasote and cod liver oil capsules were given in numbers from four to eight per day; whiskey, malt extract and nourishing diet were ordered.

About eighteen days from the operation the foot began to swell and become painful on the outer side. A second operation was performed removing the external cuneiform and part of the astragalus. The same dressings were employed as before. The case slowly improved, and the last of March she was taken home; the wound, which had extended from one side to the other of the foot was healed. The cough and pulmonary symptoms had disappeared almost entirely. In four months' time from the first operation the patient was walking somewhat on the foot. She has had no signs of a recurrence of the bone or pulmonary trouble since and is now a picture of health, weighing 140 pounds. This case is of interest in that there was such rapid destruction of bone with pulmonary complications which were all recovered from. The symptoms were of an acute osteomyelitis but no culture was made of the pus.



Case VIII. Femur showing involucrum and necrotic bone devoid of periosteum.

Case I. Mrs. McG. Irish. Age 39. Four healthy children. A father and two sisters died of consumption. She had always been well until Dec. 21, 1893, when pain was experienced in the right knee. On the following day the pain had moved into the left foot and ankle which became swollen and were very painful. A diagnosis of rheumatism had been made before I called. On the twenty-fifth of December I made my first visit and suspected an inflammation of the tarsal bones. On the twenty-sixth an incision was made to relieve tension, for the patient was suffering extremely; this gave decided relief. On the fourth of January she was moved to the hospital and operated upon.

We scraped out all the necrotic bone of the internal and middle cuneiform. The wound was dressed with iodoform emulsion and gauze daily. The patient had begun to cough and gave signs of pulmonary trouble. The temperature was 99°-100° a. m. and 102°-103° p. m. A microscopical examination of the sputum determined tubercular bacilli in great numbers. The pa-

Case II. Miss G. Aged 16, school girl. Family history good. Had never been very strong. On March 1, 1897, she fell on frozen ground, striking the knee which gradually began to swell and became painful and stiff. On June 8 I was called and found the patient suffering considerably with the knee badly swollen, tender to the touch and painful on motion; unmistakable evidences of inflammation of the joint surfaces were present. Iodoform emulsion injections were used and a cast applied for about six weeks; much benefit and relief from pain was procured for a time.

In the early part of September an injury was received to the knee in endeavoring to get around. The cast was not tolerated and evidence of disease of the inner condyle of the femur was present. The last part of the month an opening was made into the femur and the diseased bone thoroughly removed; the whole of the condyle was involved. The leg was kept in the straight position on a padded splint. Tuberculosis of lungs developed and the patient failed

gradually. The bone did not fill in very rapidly and before much repair had taken place the lung had become much diseased. The patient died July 9 from pulmonary tuberculosis.

The above case I am quite certain was originally a tubercular osteomyelitis or an epiphysitis which later involved the joint, and the injury was the exciting cause. The patient was treated under very unfavorable circumstances; while able she would not remain out of doors; but stayed in a poorly ventilated and unsanitary room. Hospital treatment was advised but refused. I am confident that our patient would have lived longer had proper care and treatment been secured.

Case III. March 29, 1898, I was called to see Baby H., aged 15 months. The child had had an attack of vomiting and pain in the abdomen, with a temperature of  $103^{\circ}$ . The abdomen was tympanitic. The gastric and intestinal symptoms gradually disappeared but in three weeks' time there was noticeable pain on moving the left thigh, which had become swollen and was flexed. On May 2 I called Dr. J. E. Moore in consultation, at which time the limb was enlarged greatly and the child had become quite emaciated. We concluded it was either an acute osteomyelitis or possibly a sarcoma. Upon the following day I used an aspirating needle and drew off pus. The cavity was then incised and a drainage tube used. Mild antiseptic washing was employed daily, and by June 20 the limb had regained its natural size and the sinus closed. Examination May 29 shows the limb shortened about a quarter of an inch, but the child otherwise walks with perfect motion in the limb. This form of bone inflammation is peculiar to children and usually affects the hip joint. When thoroughly opened and properly drained there seems to be little if any deformity or shortening resulting. I am of the opinion that this case occurred as a secondary infection from the intestinal tract.

Case IV. Mrs. McW. Age 24. She had an abscess in the groin ten years since. On December 25, 1897, patient states that her left foot and knee ached as being tired possibly from a slight injury received the day before. On January 25 her foot became sore and stiff; this condition grew worse until February 4, 1898, when I was called. I found the tissue over the internal malleolus a little red, swollen and extremely painful to pressure. The instep was also a little painful and swollen. A beginning inflammation of the lower tibia was suspected.

The patient wished to try other treatment than operation for a time. Her pain being less on account of remedies, operation was delayed. On November 6 Dr. Carlaw was called in consultation. An operation was decided upon. On March 15, at the hospital, we found the disease involved the medulla and shaft of the tibia externally from the ankle to the tuberosity. The dis-

eased bone was removed, the articular cartilage above being left next the ankle joint. The periosteum was reflected back. The cavity was packed with iodoform gauze. The patient did fairly well excepting that there was extreme hemorrhage and much pain for several days following the operation. On April 7, 1898, a second operation was performed on the foot, as the disease seemed to have affected the tarsal bones. A free incision and curetting was performed, removing part of the internal and middle cuneiform and part of the scaphoid bones. The wound in the foot healed up in about a month; it was not until February, 1899, that the skin closed over the tibia. While the wound in the leg was healing, a curettage had to be performed on September 19, 1898, on account of a miscarriage. The patient also developed acute articular rheumatism in the joints of the opposite limb, pain in the spine and mitral trouble. She is now about four months pregnant but still has some rheumatic pains and slight heart murmur. The case is unique on account of the rheumatism and heart trouble associated with it, and is similar to G. Senger's case reported and cited in the 1899 Year Book.

Case V. Mrs. B. Norwegian. Age 53, housewife. Family history good; always well until recent illness; never received an injury. Patient well nourished. Two weeks before my first visit the outer malleolus on the right foot began to swell and became red and very painful. It had been treated by leeches, hot applications, blisters, etc., so that when I called first, December 18, 1898, there seemed to be as much inflammation from the external applications as from within. The leeches were removed and soothing remedies applied, antiseptic washes for external abrasions and in two days I was able to diagnose an osteomyelitis of the outer malleolus. The patient was removed to St. Barnabas Hospital and operated upon December 23, 1898. The lower end of the fibula was found necrotic for about three and one-half inches up, there being a communication with the joint below the ligament on the outer side. The joint was washed out with sterilized water. The articular surfaces were very little deranged. A gauze drain was placed in the opening into the joint, the wound in the fibula was packed and in about seven weeks' time the wounds were perfectly healed and the patient now has very little limited motion in foot and walks with no inconvenience. While no culture was made of the pus I am confident it was a streptococcus infection or a simple, acute osteomyelitis. This case illustrates the beneficial results of a comparatively early operation. The age of patient for this disease is somewhat uncommon.

Case VI. Mr. H. Scotch, age 25, teamster. Family history good; always well until eighteen

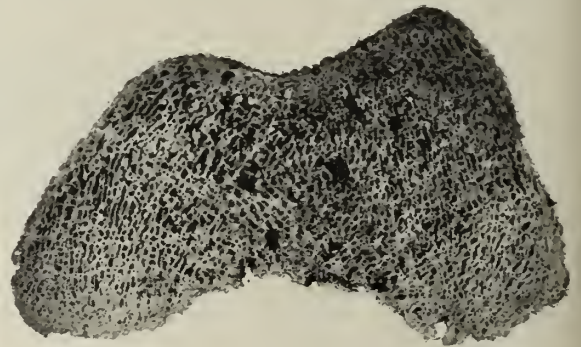
months since when syphilis was contracted. Eight months after he broke the right thumb at the second phalanx, the bone did not unite but formed a false joint. A month later, from a possible injury he developed inflammation of the metatarsal of the great toe. An operation had been performed one month after the injury upon the thumb and two months later upon the thumb and foot with no result. The sinus still discharged. I first saw the patient in July, 1898; the foot discharged continuously although the patient kept at work driving a team. The thumb had healed. Internal mixed treatment was ordered but the wound still discharged. An operation was advised and performed January 5, 1899, upon the foot. We found the first metatarsal nearly entirely necrosed, also the internal and middle cuneiform and part of the scaphoid bones. All necrotic tissue was removed and the wound packed. Boracic acid powder and gauze was used daily after the fifth day. The foot healed rapidly and on April 1 there seemed to be no more trouble, the wound being closed; but a slight point appeared two weeks later with pus formation. It was opened and packed and is granulating perfectly, the opening left being about a quarter of an inch in diameter and depth. The middle phalanx of the thumb was removed in March, the site of previous operations there showing necrotic bone. It now seems well. Of course internal treatment has been continued all the time and will be for some time to come.

This case illustrates the variety due to syphilis when involving bones other than the ordinary in that disease, yet I believe there was a mixed infection as well. This class of cases seems more difficult to cure.

Case VII. Mr. D.; age 31; American; teamster. A few distant relatives had consumption. When eleven years of age patient injured the tibia playing ball. It remained sore until two years later, when the lower end of the femur became involved and had to be scraped. The wound healed in three weeks, but every three to five years after an abscess would form in the popliteal space which he would open himself. The last attack was in 1894. On January 23, 1899, I was called. I found the patient suffering with extreme pain in the right knee joint; the leg was flexed and the popliteal space swollen somewhat. Patient gave a history of having fallen on the knee two weeks before. Pain and swelling remained until the twenty-sixth, when the temperature had increased from 100° to 103° F. There was some delirium. He was taken to the hospital and operated upon on the twenty-eighth. We opened the joint from side to side and into the popliteal space. The limb was found very septic, containing about a quart of pus. This had burrowed up into the muscles of the thigh. The cavities were thoroughly drained with tubes

and gauze. Patient was in a very weak condition when we operated; temperature being 104; pulse 140 just before the operation. The wound was irrigated and dressed each day. A great amount of pus discharged from the cavities. The temperature and pulse were considerably lower until February 7, when they began to rise and more signs of systematic infection were present.

On Feb. 9, while he was being removed to the dressing room, there came a sudden gush of blood, the man fainted and soon became pulseless. The house surgeon, who was present, immediately placed on a tourniquet, checking further hemorrhage, which seemed to be from the popliteal artery. I was telephoned for. In consultation with Dr. Hoegh amputation was determined upon, although there seemed no possible chance of the patient surviving the shock of the operation. Stimulating drinks and hypodermics were given. The amputation was made during primary anæsthesia, at the junction of the middle and upper third of the thigh. Hypodermoclysis was used during the operation. The patient was in the Trendelenberg posture. Upon examination of the joint and amputated portion it was found to be a rupture of the popliteal artery as supposed. The joint and surrounding structures



Case VIII. Cross Section at Epiphyseal line showing result of disease.

were riddled with pus cavities. The head of the tibia was somewhat diseased, also the lower third of the shaft of the femur. There were signs of an old inflammatory trouble of the femur. The man rallied, but the second day secondary hemorrhage occurred, there was excessive oozing from the stump.

On the third day after the amputation the patient was again anæsthetized, although he was in even worse condition than at the time of amputation. The flaps were separated and it was found that the arteries had sloughed above the ligatures and the muscles were gangrenous. The dead muscle tissue was carefully separated from the live structures and the wound packed firmly with gauze. From that time very little hemorrhage occurred and the patient gradually recovered strength. The bone was allowed to granulate over, and after it had become perfectly

healthy, the skin, which had retracted, was dissected up from around the stump and pulled over the granulating surface. The patient is now a picture of health, feels good; the wound has healed and he is in search of the most useful artificial limb.

This case was one of the chronic osteomyelitis variety. The former attacks ended in the formation of an abscess which, being opened, resulted in temporary recovery, while the last attack ruptured into the joint, producing a suppurative arthritis and infecting the soft tissues, causing general sepsis.

Case VIII. O. J., age 27, Norwegian, printer. Coughed for twelve years and had la grippe in December, 1898. He had complained of pain in the hip all winter while working standing, setting type, in a cold room, without fire; this produced a continual cold. April 9, 1899, I was called and found the patient with a severe pain in the left knee and thigh, with some enlargement of the knee joint resembling rheumatism. His cough was bad and there was a profuse expectoration of purulent mucus. A visit a few days later convinced me of the nature of the disease and I advised that he be moved to a hospital; this was not done until April 24. The patient was in a very bad condition, with a temperature of 104° and a pulse of 130. On the twenty-fifth the abscesses were opened along the thigh and tubal drainage used. Aspirating the joint we found no pus. The patient improved but little for a time. He began to fail later and another operation was performed May 13, 1899, with the idea of thoroughly removing all diseased bone. The limb was found in such a diseased state that amputation was performed in preference, high up on the thigh and the remaining bone scraped. The bone as you will see from the specimen which I show you is so diseased that it would have been impossible to have done other than amputate.

You will see in this specimen how the abscess cavities burrowed along, and under the periosteum, that the disease began in the bone, and the involucrum formed. I have had this specimen sawed through the epiphyseal line to show you all the diseased centers possible. Dr. Wilson, of the university, kindly made a culture from the pus in this bone. A long streptococcus was found, a similar streptococcus was observed in the sputa but no tubercle bacilli. The chronic bronchorrhœa present and the exposure to cold leads me to believe that this was a case where the infection occurred from the lungs. The patient's temperature and pulse improved greatly for a few days. The pain also ceased; he gradually failed, however, in general health until May 27, when he died from apparent exhaustion.

## A TALE OF A WORM AND HOW TO KILL IT.

BY GEORGE R. PATTON, M. D.,

Lake City, Minn.

About eighty years ago in Cuba, it was first observed that the natives often rid themselves of tapeworm by eating largely of the seeds of the ordinary field pumpkin.

The attention of the profession was first directed to the remedy by Richard Soule, of Boston, Mass., in 1851, as a result of his observation, during a sojourn in the island.

Since then the seeds have been used by the profession and laity with indifferent success, due in part, doubtless, to the fact that the rationale of the effect upon the parasite was not definitely understood, and partly, probably, to carelessness in the preparation and the method of use.

My first experience therewith was in the City Dispensary of Cincinnati, 1853. Two cases were successfully treated. An eight ounce emulsion was made from four ounces of the unhulled, crushed seeds. It was given in either case in one draught.

In both instances the worms were dead when voided. This suggested the probability that the seeds were poisonous to the parasites, as under the standard tæniifuges usually employed they are not devoid of life when dejected.

In Dec., 1855, an English soldier, late from the Crimean army came to my office with tænia, presumably the broad variety (*bothriocephalus latus*), as it is curious that the tænia solium is wholly unknown in Russia, where only the wide tænia exists.

The man had long been exposed in the trenches before Sebastopol, with scanty food, often eating raw fish, which was unquestionably the source of his worm.

He had been treated unsuccessfully for tænia at Scutari, near Constantinople, afterwards in the London Hospital, England, in the Military Hospital, Glasgow, Scotland, and in the Bellevue Hospital, New York.

I gave him seriatim, pomegranate root, koussou, male fern and kamala, without dislodging the entozoön. Without my knowledge, on his own volition, he swallowed—in one draught—eight ounces of the oil of turpentine, while the seed emulsion was under preparation, saying that he intended "to kill either the monster or himself". No unpleasant effect supervened, save severe and long continued purgation.

A radical cure was fondly supposed to have been effected, for an undivided living fragment, thirty-seven feet long was passed, tapering from the size of a thread at one extremity to three-quarters of an inch at the other, but without the head.

In less than three months he reported that joints were again being thrown off. Under importunity and the proffer of free medicine, he reluctantly consented to further trial. After a fast of one day, preceded by a cathartic, he took at one dose an eight ounce emulsion prepared from four ounces of the crushed seeds. As no laxative effect followed in twenty-four hours, one ounce of castor oil was administered. About six feet in fragments were dejected.

The unfortunate man was discouraged and lost sight of until November, 1859, when I must confess I was overjoyed to see him, as he still had his *tænia* although he only came to consult me about his wife.

Just at this point, en passant, permit me to mention, that it was my privilege while the surgeon of St. John's Hospital, 1856, to obtain from a cadaver a live *tænia solium*. This afforded the opportunity sought to submit the entozoön directly to the action of the seed emulsion, suggested by the fact that in the cases successfully treated in 1853, the worms were dead when voided. Immersion in the emulsion was fatal to the *tænia* in one and one-half hours.

The presumption was that the worm was killed either by feeding directly upon the emulsion or by its absorption into its body by endosmosis. It is reasonably probable, therefore, that *cucurbita pepo* proves curative by its direct toxic action, instead of merely driving the parasite from its habitat as obtains with other *tæniifuges*, as the oil of turpentine for instance; so that—(if I may coin a word)—the seeds are really a *tænicide* and not simply a *tæniifuge*.

In April, 1856, a farmer from Cheviot, Ohio, was referred to me with *tænia*. The stereotyped remedies of the books had been employed by local practitioners without avail.

A new departure was made in the treatment of this case. As it was eminently successful I have adhered to it ever since and its divulgence is really the object of this paper.

At the inception of the treatment a brisk cathartic was given. This was followed by a demi-fast extending through four days. During this period two evacuations were secured daily with mild laxatives, without purging. While the fast was maintained only bread, butter, milk broths, tea, coffee and tobacco were allowed in moderation.

The emulsion was prepared on the day immediately preceding the treatment and kept in a cool place. On the fifth day, beginning at five o'clock, a. m., the emulsion was given every three hours in eight ounce draughts until exhausted. The man was kept in bed without food, except the emulsion, throughout the treatment. In thirty-seven hours two *tæniæ*, with many *lumbri*ci were passed, or as he expressed it—"a basin full

of tape worms, mixed up with other worms", and it is a remarkable fact that while the *lumbri*ci were alive the *tæniæ* were dead. The head was not found though carefully searched for. One year later he reported himself cured.

Following the case reported, twelve others came under my care and had been treated with success up to the date of the unexpected reappearance of the English soldier, in November, 1859.

Throughout the year 1858 I endeavored to find him by advertising in the personal column of the daily papers in order to treat him again with the emulsion, but, without success, as he had removed to a distant suburb.

He consented to treatment with alacrity, under the assurance that a cure would result beyond peradventure. In fifty hours from the commencement of the treatment the worm was voided through the laxative action of the emulsion itself. It was 39 feet long, dead and unbroken.

The last case treated was equally successful, the eighty-sixth, that of H. O. Thompson, Lake City, Minn. He is a butcher and often ate thin slices of raw pork while cutting it up. He carried the parasite four years. During this period he had been nearly constantly under every diversity of treatment. In this instance the worm was dejected in twenty-seven hours, a laxative being required. He says that the worm was dead when passed, which was not the case under any of the other *tæniifuges* that he had taken.

#### REMARKS.

It has happened that I have never cured a case of *tænia* except with the *pepo*. At the present writing I have treated eighty-six cases and have cured the same number. More than one-third had been previously treated by medical men, although quite a number had primary treatment at my hands, being referred to me by friendly confreres, by request, for observation and experiment.

Four several cases are included in the eighty-six that were unsuccessfully treated by my friends with the emulsion and subsequently sent to me. Their failures were evidently due to lack of care in the preparation or use of the remedy. It is a funny incident that an intimate professional neighbor treated an intelligent lady for *tænia* on my plan and not succeeding sent her over to me—in which case no worm existed. She reported that she had been passing fragments of the worm for a long time, also gave a history of severe long continued intestinal irritation. I insisted upon seeing a joint of the worm. Within a week she brought a number of whitish yellow patches, evidently a pseudo-membranous exfoliation from the intestinal mucosa. Moral. See a joint first.



## PREPARATION.

Decorticate carefully by hand two heaping quarts of dry, plump and mature seeds. The kernels, which should measure a trifle over one pint, to be made into a perfectly smooth and homogeneous emulsion with water only. As a test of perfection, not a single particle of the kernels should be observable to unaided vision. It should be just like fresh cream itself.

This is so very important that I have without exception rejected every emulsion that did not conform to this test. In order to secure uniformity and perfection, only two druggists have made my emulsions in 45 years.

The emulsion when ready for use should measure three pints, and be kept on ice from the time of its making until the last dose is taken.

The aim in immediately preceding the preliminary preparation of the subject by a brisk cathartic, is to carry away any suspected accumulations of fecal masses.

The object in securing daily two evacuations through the preliminary four days fast, without any catharsis, is to starve and weaken the worm. This is assisted and maintained, too, by this demi-fast being upon food leaving a minimum of residuum in the small gut, so that the intruder may the more greedily feed upon or absorb the emulsion when it is administered.

These measures conjoined may happen, moreover, to meet an exceptional case, that is, where the head of the worm not larger than the head of a pin, may chance to be enfolded beneath one of the valvulæ conniventes. At least this is the supposition.

Absolute quietude in bed through the emulsion treatment is essential, otherwise the remedy may be rejected. This occasionally happens, and may necessitate the withdrawal of the agent until the stomach becomes quiescent.

Experience has amply demonstrated that this preparation requires to be administered in large doses at frequent intervals through an extended period of time, in order to supply a sufficiency of the toxic pabulum in continuous contact with the entozoön to encompass its destruction.

The origin of the tænia in eighty-five of the cases was directly traceable to the eating of raw or partially cooked measly pork; while in the case of the soldier, it was due to eating raw, measly fish.

In my estimate, the cucurbita pepo is a "specific"—an infallible success—in either form of tænia.

It has many advantages peculiarly its own. It is inexpensive, innocuous to man, easily procurable, does not deteriorate by age, and finally it is the least disagreeable of any, with the added advantage of being generally sufficiently laxative in itself to dispense with a subsequent cathartic.

It is a good plan to order each evacuation to

be passed into a separate vessel, containing a little water, to facilitate the search for the head.

If the indulgent reader will faithfully observe the foregoing injunctions in every detail, he will surely kill the worm, but kindly remember that with this tænicide "Eternal vigilance is the price" of cure.

## CARCINOMA OF THE LARGE INTESTINES.\*

By E. D. KEYES, M. D.,

Winona, Minn.

Carcinoma, generally defined, is a tumor which is composed of epithelial cells, which completely fill aveoli, the walls of which are formed of connective tissue.

The total number of deaths reported in the United States as due to cancer in the year ending May 31, 1890, was 18,536, of which 6,989 were males and 11,578 were females. This is below the true number. The deaths from cancer in 1890 per 100,000 of population in England and Wales was 67.5; in Scotland 60.6; Ireland 45.7; in Austria 52.8; and in Prussia 43.1.

The proportion of deaths from cancer to deaths from all other causes has been increasing in most civilized countries for the past 30 years; this is partly due to the increase of old persons in the population and partly to improvement in diagnosis, but these do not seem to fully account for the total increase.

Dennis says: "Cancer causes more deaths in the United States than the sum total of all deaths due to erysipelas, tetanus, hydrophobia, lightning, typhilitis, gunshot wounds and joint disease."

These general statements emphasize the importance and apparent increasing frequency of this dread disease. In the distribution of cancerous growths of the intestine, Greig Smith states that they are found almost uniformly in the large intestine; of 37 cases tabulated by Weir and Butlin, all save five involved the large intestine, three being in the small intestine and two uncertain. The parts involved being, cæcum, seven; ascending colon, four; transverse colon, three; descending colon, seven; sigmoid flexure, nine.

Epithelioma, attacking primarily the mucous membrane, is the form of malignant growth which is most common. Its chief characteristic is the extreme degree of stenosis which it causes even when the amount of new growth is small.

The mortality after resection of cancerous intestine is somewhere about 40 per cent. Weir's statistics give a mortality of 51.5 per cent. Kendal Franks collected 51 cases of colectomy for cancer with mortality of 40.8 per cent. With the Murphy button 30 operations gave seven deaths, a mortality of 23.3 per cent. Small groups of more recent cases give an improved mortality.

\*Read to Surgical Section of the Minnesota State Medical Society, June 22, 1899.

In cancer of the cæcum, a list two years ago of thirty-three cases operated upon gave a mortality of 48 per cent., which has undoubtedly been lowered by recent improved technique.

In cancer of the rectum, Kraske deduces from his experience that the course of carcinoma of the rectum is undoubtedly longer than is generally supposed. The disease had existed from two to three years before coming under treatment, and his estimate of the average duration of life in the round cell variety is placed between four and five years, while the squamous cell variety, affecting the anal region pursues a more rapid course and the melanotic form still more so. Of fifty-five cases operated upon by "Kraske" in which the after history was secured, twenty-two died of recurrence, with or without metastases, in from six months to twelve and three-fourths years after operation; one died from metastatic cancer of the brain without local recurrence two and one-fourth years after operation; one is alive with recurrence, one and three-quarters years after operation; sixteen died from intercurrent diseases without recurrence from one and one-quarter to five years after operation, and fifteen are alive without recurrence in from three-quarters of a year to eight and one-half years after operation.

The writer has to report three cases of cancer of the large intestine which he operated upon at the Winona General Hospital.

The first of these cases was of the anal region, both internal and external to the sphincter. The patient was a lady 55 years of age, otherwise in good health, operated upon September 24, 1897. She recovered and as yet has no evidence of recurrence. The second was a lady 57 years of age with the same of the middle third of the rectum, operated upon January 3, 1898, by the sacral route, removing the coccyx but none of the sacrum, and resecting the rectum, leaving the sphincter and two and one-half inches of the lower rectum, uniting the bowel ends by circular suturing, and packing the sacral wound with iodoform gauze. The bowel united primarily without leakage and the sacral wound closed in due time without sepsis. Recurrence occurred, however, in the lower portion of the rectum which was left, and a second operation on December 12, 1898, removed this portion forming an anus just in front of the end of the sacrum. She is in good health and free from discoverable recurrence up to the present time.

The third case was an adeno-carcinoma of the cæcum or commencing colon about three inches above the blind end of the large bowel operated upon February 14, 1898, also a lady, 49 years of age. In this case the mesentery was ligated in sections, the colon divided transversely well above the tumor, and about one and one-half inches of the ileum removed. The end of the colon was sutured with a double row of fine silk,

and the ileum buttoned into its side with a Murphy button, similar to its former relation. Iodoform drain through abdominal wound was used. The mistake was made in suturing the end of the colon, in that the free ends were not sufficiently invaginated, with the result that the sutured end sloughed and produced a fecal fistula very free at first, but which gradually closed and has been permanently healed since. Patient at present is in apparently perfect health.

The first of these cases was of the squamous cell variety, and the two others were adeno-carcinomas in character.

#### TRAUMATIC ENDOCARDITIS.\*

By C. H. HUNTER, M. D.,

Minneapolis.

October 4, 1898, Mr. J. J., age 32, never before sick, an unusually robust laborer, was admitted to St. Barnabas Hospital in the service of Dr. W. A. Hall. He had walked into the doctor's office with the greatest difficulty. So great was his dyspnoea that the doctor was fearful of syncope. Soon after entrance through the courtesy of Dr. Hall he was introduced into my clinic. His face was flushed and livid. Turning in bed induced precordial pain, palpitation and dyspnoea. The abdomen was tympanitic, a marked protrusion in the left epigastrium, epigastric tenderness.

The precordial region was full and throbbing; a weak and rapid impulse and a thrill was perceptible to the hand. The apex beat was in seventh intercostal space two inches to left of median line. The pulse at the wrist was noted at forty to eighty at different times of the day during two or three weeks, as though all the impulses did not reach the radial artery. A murmur was perceptible at the apex. Its rhythm was uncertain.

Three weeks before, this man, while carrying with a crew a steel rail, had its weight of 700 lbs. thrown upon his own strength. He had immediately expressed severe pain in the left precordial pain, a sensation as of something giving way, a feeling of fullness, a shortness of breath, a weakness and faintness that obliged him to sit. After recovering his breath a bit he attempted to move but was obliged to sit. After an hour or two he started to walk back to the village three miles. He walked the distance in two to three hours, being compelled to move slowly and stop often by the distress, the shortness of breath and palpitation.

During the next three weeks he was up and about every day he could until reporting to Dr. Hall he was put to bed. During the next two months, October and November, the epigastric

\*Read in the Section of Medicine of the Minnesota State Medical Society, June 21, 1899.

distension and tenderness disappeared, the heart beat less tumultuously, the pulse changed from forty to sixty and eighty to a more constant beat of seventy-two to seventy-six. The apex beat gradually receded to the fifth intercostal space, never inside the nipple line.

In October he had several attacks of nausea, vomiting, vomiting once considerable blood, and palpitation, this symptom always imminent. As late as December 16 there was an attack of nose bleed. Mr. J. claimed never before to have been sick, never to have syphilis, and no heart disease. The only thing lacking to corroborate these statements was an examination immediately before the accident.

The injury sustained by surrounding parts, diaphragm, stomach and abdominal and chest muscles was sufficient to define. The muscular tenderness and the distension pointed to a severe strain of the upper abdominal wall. In October and November the signs to be made out were:

A thrill; the apex beat in the fifth intercostal space on the nipple line; presystolic and systolic murmurs, the latter heard loudest toward the axilla and an accentuated second pulmonary sound. The gradual retrocession of the apex beat and narrowing of cardiac dulness were the features for November and December.

At the clinic the Saturday before the holidays, a short, flitting, systolic murmur was observed for the first time, heard loudest at aortic area. During January this murmur became fixed and the apex beat extended downward to the sixth intercostal space. The general symptoms and the lividity gradually disappeared with the rest in bed. In January he was allowed to be up. In January and February he walked about the hospital. March 16 he was discharged feeling well but with the evidence of heart disease as detailed above. Exactly what has happened to this man from the accident requires an autopsy to demonstrate. However, the clinical course seems to warrant the following conclusions:

At the moment of the accident the left and right ventricles were greatly distended—acute dilatation. The endocardium suffered laceration, extending probably to the leaflets and chordæ tendinæ. In the process of repair sufficient endocarditis was started to cause a deformity of the mitral valve, mitral stenosis and regurgitation, and later aortic stenosis, or at least roughing of an aortic leaflet.

Injury as a cause of endocarditis is not dwelt upon in the textbooks. It is of interest clinically, but especially from a legal and insurance view point.

A few observations are of record, showing the tears to leaflets and tendons that may result from strain such as this patient was subjected to, that is the heart may suffer even to rupture without visible sign.

If the patient survive, deformed valves may result. One other way in which endocarditis may follow injury is that the injured part may serve as the portal entrance of an infection—a septicæmia of which an endocarditis becomes a part.

I have encountered one such example where in a railway injury a sprained ankle was followed immediately by a continuous history ending in a fatal endocarditis.

These observations are externally rare which must be my excuse for detailing this case with minuteness. The subject is fully considered by Stern in his book "Ueber Traumatiscche Entstehung der inneren Krankheiten."

#### A DISCUSSION OF THE WALCHER POSTURE.\*

By R. E. CURTIS, M. D.,

Minneapolis.

Upon investigation we find that various postures in confinement have been used for centuries. Some of the Indian tribes of the Pacific slope make use of the knee-elbow position, and when a squaw attends a white woman, which has been quite common in the past, she requires her patient to assume this position.

We learn from a book written by Mercurio for midwives, early in the seventeenth century, that he practised making marked extension of the thighs during delivery. Several other writers in olden times have made use of postures to bring about the same result, but so far as can be ascertained, the use of this posture has been empirical rather than from knowledge obtained from scientific research.

In 1889, Walcher announced that by putting the patient on a table so as to let the hips rest on the edge, and permitting the limbs to hang down, a gain of one-third to two-thirds of an inch in the length of the true conjugate will be secured. This has since been denied by good authorities.

Walcher and others are to read papers on this subject before the Periodical International Congress for Gynæcology and Obstetrics, to be held at Amsterdam, Holland, beginning Aug. 8, 1899. The discussion of so able an assembly will probably bring forth some valuable information. On the whole I think it is generally conceded, by those who have investigated this subject, that the true conjugate is slightly increased in most instances.

The combined Walcher-Trendelenberg posture is highly recommended by some: this consists in raising the patient on a Trendelenberg table so that the hips rest on the apex of the table instead of the knees, thus permitting the thighs to extend to their fullest extent. This

\*Read in the Section of Obstetrics and Pediatrics of the Minnesota State Medical Society, June 23, 1899.

position may be readily obtained by using an ordinary straight backed dining chair, face downward, across the bed, tying the patient upon the chair as described by R. L. Dickenson in the Dec. '98 "Journal of Obstetrics." The combined method is considered superior in such operations as high forceps, version, and reposition of the cord, and allows the operator to assume a much more comfortable position in difficult forceps deliveries.

However if we are to expect any gain in the measurement of the superior strait it must be sought in the principle set forth in the Walcher posture, viz: the extension of the ilium on the sacrum.

The mobility of the sacro-iliac joint will vary considerably depending upon age, sex, pregnancy, etc. There are some cases of complete bony ankylosis of these joints, and in such the Walcher posture gives no gain.

Gray, speaking of the sacro-iliac articulation says: "the surfaces are lined with a roughened cartilage, which in early life, and in the female during pregnancy is smooth and lined by a delicate synovial membrane." We know that in some instances these and other joints of the pelvis become so loosened in the later months of pregnancy that locomotion is very difficult.

Granting that there is more or less motion in this joint during pregnancy, let us see what change occurs when the Walcher position is assumed.

On examining this skeleton we see that the promontory of the sacrum is superior and anterior to the line representing the axis of rotation of the sacro-iliac joints. Therefore when the thighs are extended as in the Walcher posture the ilio-pubic arch is rotated on the sacrum so as to bring the symphysis pubis further from the sacral promontory. In other words, marked extension causes a lengthening of the true conjugate and therefore aids engagement of the head in the superior strait; while marked flexion causes a lengthening of the antero-posterior diameter of the inferior strait.

In examining a female subject at the university laboratory I found, by actual measurement, the true conjugate to be four and one-quarter inches when the subject was lying flat on its dorsum. The Walcher posture increased this measurement to four and three-eighths inches, while marked flexion diminished it to four inches, making a difference in the length of the true conjugate between complete flexion and extension of three-eighths of an inch. It is quite probable that this measurement would be increased in the living pregnant state.

While the difference of an eighth of an inch in favor of the extended position is not much, yet it may be enough to materially help in the high forceps operation.

The transverse and oblique diameters remain unchanged in the extended position, yet all lines radiating from the promontory to points of the superior strait are increased in somewhat the same proportion as the true conjugate.

From the condition found, we conclude that at least some cases of dystocia at the superior strait will be benefited by the Walcher posture: while flexion as assumed in the use of the Clover crutch or the Robb leg holder will aid in cases of dystocia of the inferior strait.

802 Dayton Building.

Writing in the Pennsylvania Medical Journal of the differential diagnosis of smallpox, Dr. W. D. Haight says: The disease which seems to have caused the most trouble and discussion in the places in this vicinity where the diagnosis has been in dispute is varicella, and it is a matter of surprise that through the whole course of the disease an attack of small-pox, or even varioloid, should be mistaken for chicken-pox. Varicella is rapid and small-pox slow. The former has practically no prodromes, while the latter has. The former is confined to children almost exclusively while the latter, especially in communities where vaccination has been enforced or attended to, occurs more frequently in adults. Vaccination is no protection from varicella but an almost sure protection from variola. In unvaccinated children small-pox is usually of the confluent or hemorrhagic forms and has a frightful mortality while chicken-pox is always mild. In varicella the vesicles are soft to the touch while in variola they are hard and shotty. Pitting rarely follows the former and always the latter. In the latter pustules characteristically umbilicated are the rule while in the former the vesicles rarely present this appearance. Altogether the difference between the mildest case of varioloid and the most severe case of varicella is so marked that there should be no difficulty for the close observer to differentiate them.

It is not generally known that in France it is forbidden under severe penalties for any one to give infants under one year any form of solid food unless such be ordered by a written prescription signed by a legally qualified medical man. Nurses are also forbidden to use in rearing infants confided to their care at any time or under any pretext whatever any nursing bottle provided with rubber tube. Several other similar and equally stringent laws have recently been enacted by the French government, which, despairing of obtaining any increase in the birth rate in their land, are now turning their attention to the saving of the few children that are born.—Indian Lancet.

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**OCTOBER 15, 1899.****THE PLAGUE.**

The opinion prevails among experts in sanitary science that the present outbreak of the plague will not come to end before the disease has visited all parts of the world. It is not the general idea that every country is to have an epidemic but that all will be threatened at least by the appearance of some cases, the extent of the visitation perhaps depending as much as anything upon the vigilance of the health authorities. The disease is one that prevails at all seasons of the year but more particularly in the spring and summer months. It has obtained a firm foothold at Oporto, in Portugal and on the European shore of the Mediterranean, and it is to be expected that the next warm season will send it one or more steps farther. Since the last great epidemic there have been vast improvements in methods of sanitation, and in addition there has come a real knowledge of the nature of the pest itself; these changed conditions make it practically impossible that there can ever again be anything like the widespread devastation caused by the disease three or four centuries ago. Anything like a panic on account of the approach of the plague is therefore to be deprecated, but on the other hand too great a feeling of security will be a mistake quite as far in the other direction.

The disease that threatens is the one that under the various names plague, pest, black plague, bubonic plague, black death, has in past centuries caused those frightful epidemics, accounts of which have come down to the present time in

history and in fiction. This is the disease which in 1656 carried off 300,000 people in the kingdom of Naples in the space of five months. Eight years later it broke out in London and in 1664-5 depopulated that city. This is the epidemic known as the Great Plague in London and graphically described by De Foe. According to Hecker the epidemics of the fourteenth century in Europe destroyed, 25,000,000 people, one-fourth of the population. The earliest epidemics of the disease go back to the oldest Egyptian kings of whose reign there is any record. Its latest appearances in Europe previous to the present outbreak were localized epidemics in Italy in 1815, in Greece in 1828, while Cairo in Egypt suffered severely as late as 1835. It is endemic in Tripoli, in Arabia, in Kurdistan, in the valley of the Indus and in some parts of China. The present epidemic began in Hong Kong in 1894; in 1896 it raged in Bombay whence it spread to the shores of the Persian Gulf, to Egypt and finally obtained a foothold on the Continent of Europe.

The plague is not a disease of geographical boundaries or of season. It has prevailed in latitudes as high as sixty degrees north, and in the Himalayas at an altitude of over a mile. While no respecter of persons it commits its wildest ravages in the densely packed portions of large cities, where squalor, hunger and alcohol have prepared the way for it. C. W. Dabney, Jr., of the U. S. Marine-Hospital Service, accounts for its wide ravages in East Indian and China cities by the insufficient nourishment of the people, who, he says, living principally upon rice and other vegetable food, with little meat or fish, get less than the minimum amount of sustenance required to keep the body nourished. Physiology teaches that 2,000 calories per diem is the least amount that the adult can subsist upon comfortably, while the man doing a full day's work should have 3,000 calories. The food of the Indian coolie does not afford more than 1,200 to 1,400 calories on the average, and his food is principally rice, which on account of its deficiency of proteids is a poor food compared with wheat, oats, corn and rye, particularly where animal food is scarce. Hence these people being always half starved are easy victims of the plague, while the poorer classes of the large European and American cities, although even more densely

packed together than in the most crowded parts of Hong Kong and Bombay, being better nourished will doubtless offer more resistance to the disease.

The disease is due to a bacillus discovered in 1894 by Yersin. This germ somewhat resembles that of chicken cholera, is a short rod rounded at the ends, not spore bearing, not colored by the method of Gram. It is found abundantly in the pus from the buboes, sometimes even in pure culture in the fæces, occasionally in the viscera and in severe cases in the blood. It has also been found in the dust of infected houses and in the soil. It may enter the body through an abrasion of the skin, through the lungs in the form of dust or through the stomach in food or drink. Among the Chinese who go barefooted a common method of inoculation is through lesions of the feet, which explains the frequency among them of inguinal buboes. Rats, mice and other animals are very subject to the disease and an epidemic of it usually attacks these animals in advance of its appearance among men.

The attack of plague breaks out suddenly after an incubation period of five or six days. There is chill, high fever, headache, backache and the other accompaniments of an attack from a severe infectious disease; with this the characteristic feature is a swelling of one or more lymphatic glands. This swelling may go on to the formation of an abscess. In severe cases there are hemorrhages beneath the mucous membranes and skin, a phenomenon which gave rise to the popular name "black death". In about a third of the cases carbuncles appear on various parts of the body. Death usually occurs between the second and eighth day of the disease. If the patient lives six days the prognosis is greatly improved. The death rate averages from fifty to sixty per cent; in some epidemics it has been as high as ninety-five per cent. An interesting feature of the Hong Kong epidemic of 1894 was the difference in the death rate according to nationality, for while among the Chinese it was 93 per cent and among the Eurasians as high as 100, the death rate among Europeans was but 18.3 per cent, an advantage no doubt due partly to the better stamina of the European and partly to his better medical treatment.

The treatment of the plague is chiefly of interest as regards the success of serum therapy.

This method devised by Yersin who discovered the bacillus is upon the same general plan as the use of the Behring serum for diphtheria. An obstacle to its introduction lay in the fact that it required a year or a year and a half to immunise the horse from which the serum was to be obtained. Although the treatment has not as yet been tried extensively enough to warrant a positive opinion of its value, the results have been in the main encouraging, particularly at Canton and Amoy, where out of twenty-six cases treated with serum twenty-four recovered. A method of prophylactic inoculation has been carried on by Haffkine, who has obtained a protective lymph from cultures of the bacillus and used it so successfully that the British authorities in India dispense with the customary isolation in the case of those who having been exposed to the disease can show a certificate of inoculation within six months of Haffkine's method.

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## CORRESPONDENCE.

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### MEDICAL LEGISLATION.

Editor of Northwestern Lancet:

Sir:—The editorial in the Sept. 15th issue of the Lancet entitled "Discrimination in Favor of Osteopaths" has induced me to speak through the columns of the Lancet on the above topic.

The editor of the Lancet is right in the idea that a carefully prepared plan of campaign should be devised and executed.

The situation seems to be about like this:

For several centuries a body of hardworking men have been working along different lines to develop a rational, and, so far as is possible, scientific practice of the medicinal art.

This has been done, not entirely from selfish motives, but largely with the philanthropic view of benefiting the public.

To be sure the matter of dollars and of bread and butter has in a measure been an incentive, but it remains a fact that mankind outside of the medical profession has reaped the largest harvest from this great work.

But for the moment grant, even, that exclusively mercenary motives have stimulated the profession in the performance of this gigantic task, and against such immense obstacles.

The situation still remains unchanged. Here come the representatives of different factions—osteopaths, Christian Scientists, faith curers, etc., persons who have no foundation for the faith which is in them, either as to labor performed, or as to results acquired, and desire to be recognized as the equals of those who have "borne

the burden and heat of the day, lo, these many years."

In other words, they wish to have a free ride in our band wagon.

We all notice, too, that like all other people of that class, as time advances they acquire more gall and demand more and greater privileges.

While at first they proposed to confine their operations to rubbing, prayer, etc., they now in many localities are claiming the right to prescribe and administer drugs and use all therapeutic measures they may choose. I cannot agree with a member of our legislative committee who recently wrote me that the late contest between the medical profession and osteopathy, etc., in our state legislature was a great victory for the medical fraternity; for while our adversaries failed to get their desired bill passed, so did we fail to pass the one we originally planned.

To be sure we succeeded in passing a bill which temporarily headed them off, so that the outcome of the fight was simply a draw, only to have the contest renewed when both sides shall have got their second wind.

This will undoubtedly be at the next session of our legislature, and it is probable that the fight will then be to a finish.

Just how far the public, and what is supposably the intelligent public, are to blame for this condition of affairs, it is neither the policy or the province of this communication to state.

Every active and intelligent practitioner appreciates the situation exactly as it is.

Our committee on medical legislation should not lag in this matter, but during this winter they should carefully formulate a plan of campaign that will be a winner.

Not only this, but they should organize the entire force of the medical fraternity throughout the state. As many new members should be acquired for our state society as is possible.

One feature of the program for the next session of our state society should be the listening to and discussion of a report from the Committee on Medical Legislation as to the plan of campaign they have formulated, with a view to its adoption or revision. That report should be as uncompromising as is consistent with the policy and interests of the entire medical fraternity. I have always been averse to the members of our profession having much to do with politics; but "war is hell," and I know of no reason why, if it becomes a necessity, we should not use our elective franchise as a weapon with which to defend ourselves and use it effectively.

THEO. L. HATCH.

Owatonna, Oct. 10, 1899.

Editor of Northwestern Lancet:

Sir: The idea of uniformity of the requirements for the license to practise medicine

throughout the United States is an old one. The efforts in this direction, however, seem not to have been accompanied by the desired result. After all appearances the time is come for taking further steps in this direction. It is evident that the medical profession regards the uniformity of the requirements not only as desirable but as absolutely necessary, for several reasons.

The Wayne County (Michigan) Medical Society was so strongly impressed by the necessity of this measure, that it appointed a committee of five to investigate the question.

Circulars which have been sent to the authorities in the different states and territories met to a great extent, with very satisfactory preliminary replies.

The blank contained seven questions of which 5, 6 and 7 were the most important:

5. Would you be inclined to favorably consider the plan of entering into a state of reciprocity with other states (or territories) which have practically the same requirements for the license of practicing medicine as your state (resp. territory) has?

6. Would you join in the efforts in working out a memorandum to be presented to the legislative bodies of the different states with the view of introducing a bill as to the subject matter, and would your secretary coöperate with us?

7. Have you any suggestions to make?

Up to September 14th, answers were received from 39 states and territories.

Favorable answers to question 5 or 6, 34.

Unfavorable answers to question 5 and 6, 0.

Favorable answers to question 5, 30.

Favorable answers to question 6, 30.

Unfavorable answers to question 5, 4.

Unfavorable answers to question 6, 1.

The unfavorable answers were accompanied by explanations which give hope that the difficulties might be overcome which, at present, did not allow a favorable reply.

We also met with approval and encouragement from other sources. The Wayne County Medical Society takes the liberty to suggest that the medical press advocate the matter and systematically pay attention to the details which might present themselves. We further suggest that the matter be taken up by all medical societies in the country and as we are unable to reach all of them, we ask for your assistance.

The Wayne County Medical Society solicits your coöperation and suggestions, for which kindly accept our thanks in advance.

Very respectfully yours

E. AMBERG, M. D.

Secretary of Committee.

The full report of the committee is as follows:

The committee appointed by the Wayne County Medical Society met several times. It appeared that the time was too short to follow

up the two questions put by the society, therefore only the Uniformity question was taken up. The committee sent to the authorities in the 51 states and territories circular letters and blanks.

The committee is glad to acknowledge the prompt answers which have been received.

Naturally the answers could only be of a preliminary character.

The committee begs to submit to the society the suggestion to express their thanks to the parties concerned and to send them the report of the committee.

Answers have been received from 36 states and 3 territories.

Favorable answers to questions 5 or 6, 34.

Unfavorable answers to questions 5 or 6, 0.

Favorable answers to question 5, 30.

Unfavorable answers to question 5, 4. Ark., Cal., Col., Conn.

No answers to question 5, 1, Ohio.

Not prepared to answer question 5, 4. Ala., Del., Mass., W. Va.

Favorable answers to question 6, 30.

Unfavorable answers to question 6, 1, Ky.

No answers to question 6, 2, N. J., Penn.

Not prepared to answer question 6, 6, Ark., Ala., Del., Mass., Miss., W. Va.

It must be remarked that the unfavorable answers are accompanied by explanations which make it not at all impossible to overcome the difficulties, which, at present, do not allow a favorable reply. It must further be considered that in some states there might be no authority in this matter; viz: in Michigan at present. Naturally no answer could be expected from such a state. Some of the answers to question 7 might be reported in extenso. (See answers.)

After all it is the desire of, we might say, the majority of the authorities all over the United States, to have the matter settled. Editorials have been noticed in the "New York Medical Journal" and in the "Physician and Surgeon." Other parties also encouraged the movement. The committee found that there existed a National Confederation of State Medical Examining and Licensing Boards. However, the committee is of the opinion that the medical societies of the United States ought to act separately, at least for the first time, because in this way, the aim of the national confederation can only be furthered.

Only one single state gave as reason for not answering their membership to above mentioned society.

It was understood by the committee that the society did not expect any final results, because these can only be reached in the course of years. The movement has only been started and we can report that the outlook is promising.

We see that many parties are now interested in the matter.

There exists also a strong desire for a better medical education. In order to bring the movement to the knowledge of wider circles in the medical profession, the committee suggests, that the Wayne County Medical Society, without delay, send a circular to all the medical papers and all national and state medical societies in the United States, also to some of the other larger ones, reading like this: (Circular.)

It appears that the laity does not quite understand that questions of this kind are of not less importance for them than they are for the medical profession. Here the press must do its part. The committee appreciates the interest the daily press is taking in the matter. We are convinced that the press can only approve of the movement and that it is aware of the fact, that in this case, not much can be accomplished without the vigorous assistance of the same. We hope the press will follow up the movement with tireless energy because it is in the interest of the national welfare.

Frank D. Summers, M. D.

Geo. G. Gordon, M. D.

E. H. Troy, M. D.

E. B. Smith, M. D.

E. Amberg, M. D.

## BOOK NOTICES.

Progressive Medicine. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, of Philadelphia, etc. Volume III. September, 1899. Philadelphia and New York: Lea Brothers & Co., 1899. (Price per set of four volumes, \$10.00).

The Third volume of "Progressive Medicine" deals with diseases of the thorax and its viscera—the heart, lungs and blood vessels; diseases of the skin; diseases of the nervous system; obstetrics.

The scope of the work, which is to show the latest advances, discoveries and improvements in medical science, admits of the discussion of those topics alone in which advances have been made. No attempt is made to cover the whole ground of the subject. In obstetrics, for instance, attention is paid chiefly to the morbid conditions of pregnancy, to extrauterine pregnancy, eclampsia, the surgery of obstetrics, especially Cæsarean section and the accidents of labor, the puerperium and lactation.

A Laboratory Manual of Physiological Chemistry. By Elbert W. Rockwood, B. S., M. D., Professor of Chemistry and Toxicology in the University of Iowa. Illustrated. Philadelphia, New York, Chicago: The F. A. Davis Company, 1899. (Price \$1.00).

In this little book is combined a guide to the analysis of urine, and also a study of the principal organic and inorganic substances that enter



into the composition of the human body. Designed essentially for students it is interleaved with blank sheets for notes and is on the whole as complete and convenient a laboratory manual as any in the market.

## MISCELLANY.

### AMERICAN PUBLIC HEALTH ASSOCIATION.

The Twenty-Seventh Annual Meeting of the American Public Health Association will be held at Minneapolis, Minnesota, beginning October 31st and continuing four days.

The executive committee has selected the following topics for consideration:

- I. Pollution of Water Supplies.
- II. The Disposal of Garbage and Refuse.
- III. Animal Diseases and Animal Food.
- IV. Car Sanitation.
- V. Steamship and Steamboat Sanitation.
- VI. The Etiology of Yellow Fever.
- VII. The Relation of Forestry to the Public Health.
- VIII. Demography and Statistics in Their Sanitary Relations.

IX. The Cause and Prevention of Infectious Diseases.

X. Public Health Legislation.

XI. The Cause and Prevention of Infant Mortality.

XII. The Period During which Each Contagious Disease is Transmissible and the Length of Time for which each Patient is Dangerous to the Community.

XIII. Sanitation, with Special Reference to Drainage, Plumbing and Ventilation of Public and Private Buildings.

XIV. Method of International Arrangement for Protection Against the Transmission of Infectious Diseases.

XV. Disinfectants.

XVI. To examine into the Existing Sanitary Municipal Organizations of the Countries Belonging to the Association, with a View to Report upon those most Successful in Practical Results.

XVII. Laboratories.

XVIII. To Define What Constitutes an Epidemic.

XIX. National Leper Home.

XX. Revision of Classification of Diseases.

XXI. Dangers to the Public Health from Illuminating Gas Leakage.

Upon all the above subjects special committees have been appointed to report.

Papers will be received upon other sanitary subjects.

A daily program will be issued each morning, giving the titles of papers, reports, etc., that will be presented, with such other information as may

be of interest in connection with the work of the day.

The headquarters of the executive committee will be at the West Hotel. A meeting of the committee will be held in the hotel parlor on Monday, October 30th, at 10 a. m. Subsequent meetings of the committee will be held daily at such hours as may be hereafter determined.

The advisory council will meet on Thursday, November 2d, the hour and place to be announced by the president, for the purpose of acting as a nominating committee of officers for the ensuing year, and to consider such questions and make such recommendations as shall best secure the objects of the association.

The local committee has arranged with the railroads for a rate of one-and one-third fares for the members of the association and their friends attending the Minneapolis meeting. This arrangement will be effected by the certificate plan—members paying a one-way fare and taking a receipt for the same from the local ticket-agent selling the same; upon presentation of this receipt, they will receive a certificate of membership and attendance from Dr. H. M. Bracken, the honorary secretary of the local committee,—at the Minneapolis meeting. This certificate will be presented to the joint agent of the railway companies, who will be present at the meeting, November 2d, and who will issue, at that time, a return trip ticket at reduced rates.

Certificates are not kept at all stations. If, however, the ticket agent at a local station is not supplied with certificates and through tickets to place of meeting, he can inform the delegate of the nearest important station where they can be obtained. In such a case the delegate should purchase a local ticket to such station and there take up his certificate and through ticket to place of meeting.

Going tickets, in connection with which certificates are issued for return, may be sold only within three days (Sunday excepted), prior to, and during the first three days of the meeting; except that when meetings are held at distant points to which the authorized limit is greater than three days, tickets may be sold before the meeting in accordance with the limits shown in regular tariffs.

The meetings of the American Public Health Association will be held at the First Unitarian Church, situated at the corner of Eighth street and Mary Place. It is within one block of the electric cars on Hennepin avenue, is at a distance of four blocks from the West Hotel, and within a few moments ride of the railway stations.

The general association will open its meetings on Tuesday morning, October 31st, at ten o'clock, at the First Unitarian Church.

A public meeting will occur on Tuesday evening, October 31st, at eight o'clock, at the First

Unitarian Church; at which addresses of welcome will be given by the mayor of the city, the Honorable James Gray; by His Excellency, the governor of the state of Minnesota, Honorable John Lind, and by the president of the University of Minnesota, Cyrus Northrop, LL. D.; and at which the annual address of the president of the association, Dr. Henry Mitchell, will be read.

The citizens and the medical profession of Minneapolis will tender to the association, through the local committee of arrangements, the hospitalities of the city.

The Minnesota Academy of Medicine will tender to the members of the association a "Smoke Social" at the West Hotel, upon Wednesday evening, November 1st.

Upon Thursday evening, November 2d, the association and its visiting ladies will be tendered a general reception at the West Hotel.

Upon Friday afternoon, November 3d, an invitation will be extended to the association by the officers of the United States Army, stationed at Fort Snelling, to visit that historic spot, which is picturesquely situated at the confluence of the Mississippi and Minnesota rivers.

Opportunities will be offered by the committee to its guests to view the city and its environs, and, particularly, to enjoy, so far as the season

will permit, the beauties of its natural park system.

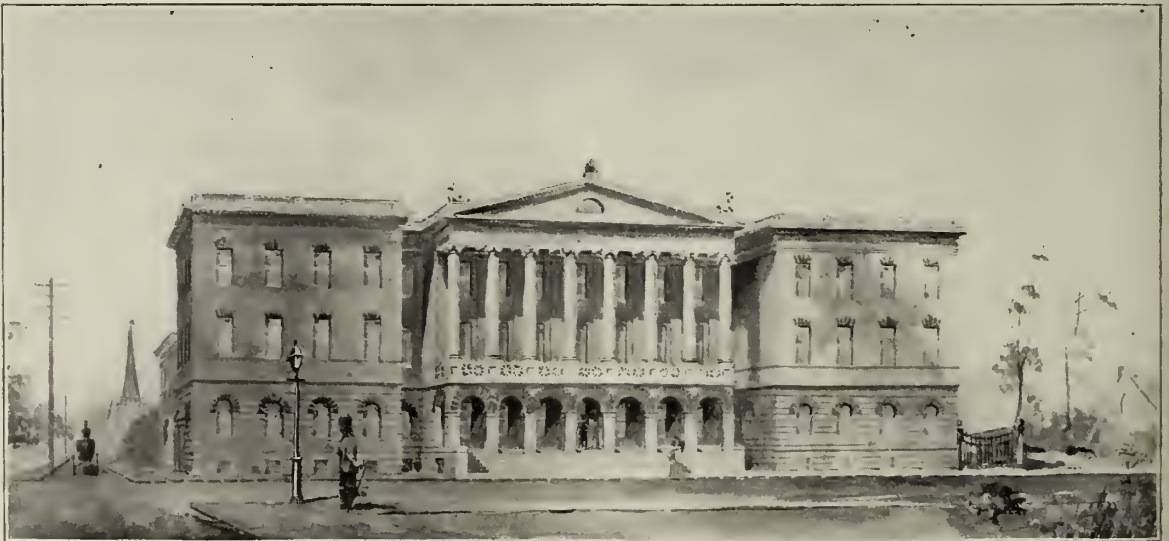
The ladies of the city will have the pleasure of entertaining the ladies accompanying members in attendance upon the association meeting.

The committee on laboratories has arranged for a meeting of that committee to be held on Monday, October 30th, at the laboratory of medical sciences, University of Minnesota. Subjects of special interest to laboratory men only will be discussed at this meeting, called to avoid taking the time of the general session in the discussion of technical questions relating to methods of laboratory work. The committee's report will be presented in general meeting. All members of the association, who may be in the city on Monday, are invited to attend this meeting.

The meetings of the association are open to the public. Many valuable papers have been secured, which, with the reports from special committees, insures an interesting program, and all persons, of whatever profession or occupation, are cordially invited to be present.

Further information concerning local matters, if desired, may be obtained by addressing Dr. H. M. Bracken, Honorary Secretary, Minneapolis, Minnesota.

### THE NEW COLLEGE OF PHYSICIANS AND SURGEONS.



The medical department of Hamline University is to be congratulated on the handsome, commodious, and well-appointed building it is soon to have. The corner stone of the new building, of which the above is an illustration, was laid a few days ago with appropriate ceremonies, Dean Crafts, ex-Dean Moore, several professors, and representatives of the Methodist church, including Bishop Joyce, took part in the interesting ceremonies.

The location of the building is exceedingly fortunate, it being across the street from the new city hospital of Minneapolis. The estimated cost of the building, when completed, is \$75,000.

All are cordially invited to attend the annual meeting of the Minnesota Valley Medical Association, at Mankato, December 5, 1899. Titles of papers should be sent to the secretary, Dr. E. D. Steele, Mankato.

## ORIGINAL ARTICLES.

## PERINEAL SECTION.

BY GEORGE R. PATTON, A. B., A. M., M. D.,

Lake City, Minn.

This paper is based upon an experience of eighteen sections, from 1855 to 1880.

The first fifteen were made in Cincinnati, O.; the last three in Lake City, Minn. Six of the total were made for traumatic strictures; one for drainage following suprapubic lithotomy; the remainder for strictures due to specific urethritis. Nine were made without a guide, except to the point of occlusion; in the others, a Syme's staff was passed into the bladder. A double curved catheter was retained—quite up to complete healing—in the first fifteen, while no catheter was used in the last three cases.

I was fortunate in having no permanently serious consequences in any of the cases, probably from due preliminary preparatory treatment, with subsequent carefulness, attention to detail, cleanliness, regimen, etc.

I will spare your patience by omitting the narration in detail of the first series, in which a catheter was retained in the viscus,—simply mentioning, however, that the annoyingly persistent nervous phenomena and grave sequelæ encountered, were due, in my opinion, to the maintenance of a catheter in the operative wound. I recall an instance wherein this was especially noticeable, that of a soldier with a deeply lacerated perineal gun-shot wound, involving the perineal urethra and the rectum. He came under my service when I was surgeon-in-chief of the Green-up Street Military Hospital, in 1863. It is my belief, founded on later experience, that the wearing of the catheter in this case, after the section was the determining factor of a recto-perineal fistula, that was subsequently closed only after a deal of time and perplexing operative procedures.

The three cases in which the catheter was dispensed with, altogether, will be given in detail:

Case I. H. Bandshaw, of Goodhue county, Minn. Age, 69. The primary operation made Nov. 15, 1879, was a suprapubic lithotomy, immediately followed by an external urethrotomy for drainage and to oppose cystic distension, this being deemed advisable in this instance, in preference to drainage through the pubic wound.

The bladder was closed by immediate suture, and healed without leakage on the seventeenth day. The section in the perineum closed on the twenty-first day. There was no apparent stress,

at any time, from vesical distension. A catheter was never used, but a No. 18, A. S. sound was passed throughout the urethra every day.

This case was out of the ordinary. The man carried the stone twelve years. He had a pelvis contracted by rickets in early childhood, so that the tuberosities were only two and one-half inches apart; moreover, he had an unreduced dislocation of the hip of twenty-seven years' standing, with a traumatic stricture, due to the accident which caused the dislocation. The stone, removed entire, was the size of a large hen's egg and weighed over one-quarter of a pound. He died about one year later of chronic interstitial nephritis.

Case II. A. Walter, Lake City. Age 42. While at carpenter work, July 26, 1880, he fell twelve feet, alighting astride of a joist on the floor below. The perineum was lacerated and the urethra injured, much blood being voided through the latter channel during the forty-eight hours succeeding the accident. The urine was retained, but catheterism was made by cautiously guiding the instrument through the obstruction, supposedly caused by the severed ends of the tube.

On the fourth day the catheter could not be passed on account of the infiltration of the tissues, and the displacement of the probably divided urethra. The general symptoms having become alarming, external division was determined upon and the patient anæsthetized. The staff entered the bladder after tedious manipulation. An incision was made upon it anterior to the point of injury and carried backward until the infiltrated parts were divided.

The urethra was found to have been entirely severed, the bulb and adjacent tissue presenting a structureless, pulpy appearance, rendering one portion distinguishable from another with difficulty. The staff was removed. After incising the meatus, to get sufficient space, a No. 18 sound was introduced into the bladder and withdrawn. No catheter was used at any time.

The next day the sound was reintroduced, its passage being facilitated by the introduction of the point of the forefinger, well oiled, into the perineal wound.

This was continued every day, the wound healing kindly by granulation. The patient made a rapid recovery, without incident. He was instructed to introduce the No. 18 sound once a week. He lived sixteen years without any urethral symptoms, dying of cirrhosis of the kidneys as I have been informed by Dr. W. F. Wilson, of Lake City, who was his physician.

Case III. Henry Schmuzer, West Albany, Minn. Age 62. When thirty-five years old he contracted a specific urethritis. Stricture super-

vened. For twenty years micturition had been slow and painful, frequently, guttatum. Within seven years several surgeons essayed catheterism, but failed.

Mr. Schmuzer was first examined June 13, 1880. Careful and persistent efforts, with and without anæsthesia, were unsuccessful in passing even the smallest filiform bougies, though a variety were employed, in connection with the tunnelled sound. An operation was advised, but no more was heard of him until July 18, when I was summoned.

He was found in great agony, not having voided urine for thirty-six hours. Anticipating this trouble, I carried an aspirator with me, as he lived out of the city.

By suprapubic puncture, 40 oz. of urine were aspirated. He was brought into the city the next day, when the aspiration was repeated from time to time, it being deemed best to delay the section a few days until his condition improved.

On July 24 the operation (external perineal urethrotomy, without a guide) was made. A No. 22 F. S. sound was carried down against the face of the constriction to act as a guide and steady the urethra. An incision was made in the median line of the perineum, upon the point of the staff, and the urethra freely divided in front of the stricture, which was about three-fourths of an inch anterior to the juncture of the spongy and membranous portions.

Loops of silk were passed through either edge of the incised urethra and placed in charge of the assistants holding the limbs. This little point of holding apart the lips of the wound, suggested by Mr. Avery, of Charing Cross Hospital, London, is a very important aid to success in the operation—as it admits the light to assist in the exploration and furnishes a constant guide to that most important land mark—the median line.

The most painstaking search failed to penetrate the stricture. Guided by the left forefinger in the rectum, the dense cicatricial tissue was carefully dissected backward in the line of the raphé for about one inch, when a few drops of fluid signalled the way clear. The opening was sufficiently enlarged: then, incising the meatus, a No. 18 sound was passed throughout the urethra, into the bladder, and withdrawn. All the cicatricial tissue was carefully dissected out.

As the hemorrhage had been alarming throughout the operation and yet continued, three several deep ligatures were required, and the wound temporarily packed with gauze held in situ by a T bandage.

Thereafter, the operative wound was left to itself, cleanliness only being enjoined. No catheter was used. The sound was passed once daily. The wound closed on the twenty-third day. He was dismissed, with the injunction to use the sound every day for thirty days, and at weekly in-

tervals always thereafter. He never had any subsequent urethral trouble.

He died of hemorrhage of the rectum fourteen years later, as I have learned from Dr. J. C. Adams, of Lake City, who was his medical attendant.

I had the good fortune, in these operations of having the valuable aid and counsel of my son, Prof. Edward A. Patton, Pasadena, Cal.

#### REMARKS.

As there has been a lack of harmony among surgeons regarding the treatment of lacerations or rupture of the urethra, and of the disposal of the operative wound where external perineal urethrotomy has been resorted to, we will take a hurried glance at the subject, particularly with reference to the retention, or non-retention, of the catheter, before section in the first and after the section in either class of cases.

In any instance where there is undoubtedly a rupture of the urethral canal, the question arises: What is the best course to pursue? The usual reply would be: If extravasation has not taken place, tie in a catheter, retaining it all the way from twenty-four hours to such a time as the wound is supposed to require for healing.

Now, strange to relate, I have been unable to find reported a single case, wherein this happy desideratum was ever attained. It may therefore be laid down as an axiom that rupture of the urethra in the perineum will be followed by extravasation sooner or later.

Birkett, Gross, Gouley, Holmes, Stephan Smith and many others, are authority for affirming, that no matter how large the catheter introduced, the urine will pass between the urethral wall and the instrument. This fully accords, too, with my own experience. The instrument will be found lying loosely in the canal, showing that the catheter, which any surgeon will not hesitate to pronounce a direct irritant, fails to fulfil its object.

It is questionable whether the urethra, when really torn across, will ever heal by primary union, especially as the urine quite invariably escapes at the time of injury, or at least before the case is seen by the surgeon, even if we did not consider the mangled condition of the tissues as inimical to repair, without a means of exit for the blood and inflammatory products extravasated into the corpus spongiosum.

Where cases have been reported wherein the attempt was made to treat lacerations of the urethra by the retention of a catheter, it will be noted that after a variable period of quiescence, rigors, fever and other symptoms, more or less violent, accompanied by the local evidences of infiltration, have called for incision into the perineum, or, better yet, for external perineal urethrotomy.

Is it not better to perform the operation at once, rather than to expose the patient to the dis-

comfort and hazard of a delay which would surely increase the local mischief?

It must be so, especially when we consider that the period of confinement will not be as long as if he was treated even successfully by the old time method.

On the tenth day, Cases II and III were out of bed, which would hardly have resulted if they had had catheters tied continuously in their urethras.

It is a truism that every rent or rupture of the urethra is a stricture in embryo; therefore, I earnestly advise the early performance of external section, where there is a laceration of the perineal urethra, upon the following grounds:

1. It prevents subsequent stricture.
2. It renders catheterism unnecessary by allowing a free outlet for the urine.
3. It gives a free passage for extravasated products and thereby prevents subsequent infiltration into the perineum, scrotum and corpus spongiosum.

In the event of performing a section, either for a lacerated urethra or for the division of a stricture, what is to be gained by the retention of a catheter?

Agnew, Bryant, Druitt, Park, Erichsen, Hamilton, Belfield, Gross, Holmes and other eminent men, enjoin its use, some for the twenty-four hours succeeding the operation, while others advise its retention until reunion of the divided tissues occurs.

Let us enquire what for? Its immediate use is to endeavor to prevent the urine from coming into contact with the surfaces of the wound; but, Keyes, for one, assures us that this invariably occurs at the time of the operation. Agnew does not use the catheter after incising the perineum where infiltration has taken place "until the swelling has subsided and the condition of the patient has improved." This would rather lead us to believe that the contact of the urine is not exceedingly injurious, or the patient would hardly make the desired improvement. Then, again, we have the exemplification of median and lateral lithotomy.

As eminent a surgeon as Bryant, however, lays down the following rule: "When a catheter has been introduced, it must be left, since it is important that the patency of the canal should be maintained during the whole period of its repair, and its subsequent contraction in a measure neutralized." Here, we have the supposed indication for the late retention of a catheter, i. e., to prevent the closure of the canal.

Holmes, on the other hand, declares that "the catheter stretches and tends to keep the tissues apart."

Agnew says: "I have seen a catheter worn for eight months, yet without the opening in the urethra healing. In three weeks after withdraw-

ing it the patient was well." Yet, with rare inconsistency, he states, in discussing the section for laceration: "As soon as general and local appearances have improved, usually requiring five or six days, the time has arrived when the catheter must be inserted and allowed to remain three or four days, after which, if the patient has good control of his bladder, it may be removed, and used at regular intervals every twenty-four hours."

Holmes has seen fistula form, and refuse to heal, (after external perineal urethrotomy), with the retention of a catheter, yet—mirabile dictu!—he still gives his sanction to this detail of the treatment. His editor, however, in the American edition of his System, remarks in a note: "This step of the operation may be omitted with advantage," also "the presence of the catheter is a source of discomfort to the patient, makes him more apt to have chills and cystitis of the neck and cannot prevent the contact of the urine with the cut surfaces."

Erichsen would retain a catheter for forty-eight hours, after the external operation for stricture; Hamilton for twenty-four hours; Agnew eight; and Druitt for the same length of time.

All indications for maintaining the caliber of the canal are entirely fulfilled by the daily passage of a full sized sound for thirty days. It is an almost painless procedure. Any danger of subsequent contraction is removed by its weekly use for an indefinite time, better really through the remainder of the life of the individual, though it has been proven that this is by no means necessary.

Relative to hemorrhage after external urethrotomy, I would suggest a precaution. While I was residing in New York, '64-'66, my friend, the late Prof. Van Buren, of Bellevue Hospital, made a perineal section in which the bleeding was alarming. He packed the wound without the "T" bandage. In the night following the operation, the man died while asleep from hemorrhage, the packing having become displaced.

I have just noted in Wyeth's Surgery—the edition just published—that Prof. Wyeth himself met with the same misfortune in one of his own cases. I quote: "In order to prevent bleeding, the wound should be packed temporarily with gauze, held in position with a "T" bandage. A fatal hemorrhage occurred in one of my cases, the packing having become loose while the patient slept."

A fatality nearly happened in one of my patients in St. John's Hospital, Cincinnati, O., while I was surgeon there in 1855. A man was cut for stricture in which the loss of blood was dangerous, but no precautions were taken. When called in the night, I found the man exsanguinated and almost moribund. The packing was placed in

the wound and held by the "T," while counter pressure was made through the rectum by inserting a thin rubber bag and distending it with ice water.

To sum up: an early section, followed by a large sound, without the catheter, with a temporary gauze packing, held in situ by a "T" bandage, should be, and now usually is, the line of practice in these cases.

While hardly germane to our subject, I may be pardoned for collating from several of the older authorities of distinction, their estimate of perineal and suprapubic sections, presuming that it may prove "mighty interesting reading" to the up-to-date surgeon, or, at least, may give him a chance to smile.

Of perineal section, Prof. Van Buren in the *Medical Record*, of New York, Vol. I, page 280, says: "This operation is the most difficult in surgery".

Prof. Gross observes in his work on diseases of the bladder, page 801: "This operation requires the most consummate skill for its successful execution: none but a fool or a madman would even attempt it unless he had a profound knowledge of anatomy and a thorough and perfect knowledge of the use of instruments."

Prof. Frank H. Hamilton, in his *Surgical Treatise*, page 108, remarks: "This operation requires more skill and patience than any other in surgery."

Prof. Erichsen, of London, in his work on surgery, page 1129, writes: "This operation I have no hesitation in saying, is the most troublesome in all surgery. I have more than once seen the most skillful operators foiled in their endeavors to accomplish it, and compelled to relinquish the operation without concluding it."

Of suprapubic section, Dr. Gouley, of New York, in his work on diseases of the urinary organs, writes, page 323: "This is very justly regarded as the most difficult and brilliant operation in surgery, requiring a consummate knowledge of anatomy, the greatest deliberation and the most imperturbable coolness."

Profs. Keyes and Van Buren, in their book on diseases of the genito-urinary organs, page 328, state "That lithotomy (suprapubic section), is an important operation and eminently surgical is undoubted; that it requires a cool head and a steady hand for its performance none will dispute."

Prof. Bigelow, of Harvard University, writes: "Of course no novice will attempt this operation."

Cheselden, a noted English surgeon, wrote concerning it that he attributed his own success "to the happiness of a mind that was never ruffled or disconcerted, and a hand that never trembled during any operation."

Against the foregoing overdrawn and misleading excerpts, with sincerity and earnestness I protest, as their evident trend, and that of others in like vein, is to discourage and terrorize ably qualified practitioners, who are cautious and careful, into declining important cases, which they may be in every way equipped to successfully undertake.

They suffer thereby not only pecuniary loss, but also the chance of acquiring that muscle control, or deft digital expertness in technique and details, which actual surgical work with the knife in hand alone can give, as well as the opportunity of increased professional reputation, for it is an observable fact that one successful surgical case will add more to a physician's repute among the populace than four score of supposititious cures in conglomerate therapeutic practice.

Moral: Try it once yourself.

It was quite the same concerning ovariectomy, when the writer entered the profession over 50 years ago, and long before the advent of gynecology, while Atlee with a few other bold spirits were blazing out the way for it, without ever seeing a lion in the path.

At that time, the entire "science and the art" was comprised in viewing through a glass speculum, the os, and daubing it with caustic, unless entirely normal, and lucky it was to escape even then.

Ovariectomy was tabooed as frightfully difficult and dangerous by surgeons at home and abroad, while a large majority of medical men in general stigmatized it as "manslaughter;" but all the same, the poor woman was tapped and re-tapped until she died.

I once heard Dr. Charles D. Meigs, of Philadelphia, professor of diseases of women, in the Jefferson Medical College, say: "Ovariectomy should be prevented by statute." And I note the same sentiment in these very same words in his treatise on Diseases of Women, 1854 edition, page 339.

In those days, we were likewise warned against the hazards and difficulties of resections, so, if we had, for instance, a case of caries of the tarsus, we usually cut the leg off as the easiest way out of the dilemma.

Relative to suprapubic section, there is not a scintilla, not even the shadow, of an impediment. But in perineal section, by keeping a finger in the rectum to guard it; viewing constantly the raphe as an ever present central guide; keeping well down the heel of the knife, with its axial line coincident with the axis of the pelvis in making the incision, this operation may be easily made, without mishap, by any vigilant and painstaking surgeon of little experience, who possesses only a modicum of manual dexterity.

**RHEUMATIC FEVER.\***

By J. B. MCGAUGHEY, M. D.,  
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The title of this paper was not selected with commendable accuracy. "Some Observations on Acute Rheumatism," would more correctly name the matter submitted.

Rheumatic fever or acute rheumatism has been recognized and studied as a distinct disease from an early period in the history of medicine. The supposed etiology and proper treatment have been repeatedly announced, upheld for a time, contradicted, overthrown, or supplemented, thus making the literature of this disease for centuries past, except in the single particular of description of the symptoms, a jumble of theories, often untenable, based on faulty observance of facts and erroneous deductions concerning pathology and etiology. The treatment recommended has varied from the most inactive expectancy to the energetic exhibition of powerful medicinal agents, the strength of which was only equalled by the quantity of the same. The use of the lancet has had strenuous advocates and opposition not less pronounced. Probably in no other disease have the changes in views of etiology and treatment succeeded each other with such rapidity. If we could weed out from the volumes that have been written upon the etiology and pathology of rheumatism, all that is incorrect, not proven, or valueless, that remaining would be insignificant in amount.

These conditions are not due to the want of earnest, painstaking, intelligent investigation in the past or in the present, but rather to the insidious and elusive nature of the morbid material, which may be a poison, germ, toxins or a combination of the same, on which the existence of the disease depends as well as to the variety of manifestations under different conditions and in different persons.

There is reason to believe that a decided advance has been made towards a better understanding of the nature of the causes of this painful affection since the influence of numerous varieties of microorganisms and their products in causing disease has been, at least in part, learned and that in the near future a reasonably definite knowledge of the germ or toxine that inaugurates or maintains the changes in the system which constitute an attack of rheumatism will be gained. The striking resemblance in many points between this affection and other diseases now known to be dependent upon specific poisons or microbial infection seems to present a reasonable basis for this belief. Speculation concerning the gateway through which the poison finds entrance to the system, however interesting, cannot be regarded as highly important until the nature of the same has been determined.

An experience of nearly a third of a century in Southern Minnesota has convinced me that the disease has increased during that time, altogether out of proportion to the increase in the population. No known cause can be assigned for this but the fact is worthy of note, for, be it observed, the inhabitants are better clothed, quite as well fed, dwell in better houses and are less exposed to the vicissitudes of the weather than were those of thirty years ago. The disease, too, seems to be prone to attack those who are provided with, not only the comforts, but the luxuries of life and are surrounded with apparently the best hygienic conditions, and those whose avocations are attended with little or no exposure to cold, snow or rain.

It is true the intemperate, in eating or drinking or in both, appear to be more liable to contract the disorder than those who lead temperate or even abstemious lives, yet the predominance of cases furnished by the class first mentioned is surprisingly small and it may be safely stated that rheumatism is much more frequently produced by dietetic intemperance than by the alcoholic variety.

The influence of hereditary tendency as a factor in determining the advent of the disease is too important to be disregarded, but it has been accorded a prominence that may be justly regarded as unwarrantable. It is not uncommon to meet with cases in which there is a clear history of rheumatism in two or more generations or in two or more members of the same family, but it is more common in my experience that the sufferer is the only one in the family thus affected and that no trace of the affection can be found in the preceding generation.

The etiology of the disease being thus obscure, the symptoms far from uniform or constant, typical cases constituting the exception rather than the rule and the fact that tissues, widely dissimilar in structure and function are involved, should prepare us to find the treatment recommended varied in character, apparently contradictory and on the whole far from satisfactory. A study of the natural history of the affection, in different subjects and under various conditions, forces us to the conclusion that many of the supposed effects of treatment have been actually due to efforts of nature.

Time will not permit an extended review of the treatment of the past which would be interesting rather than profitable. It has been claimed by members of the profession as well as by the laity, that formerly blood-letting was regarded as indispensable in every case. Permit me to make the following quotations on this point, which show clearly that in days long past, conflicting views were entertained on the propriety of resorting to this

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measure. "The experience of many ages has established the utility of bleeding in acute rheumatism, and blood must be drawn from a large orifice in a considerable quantity, frequently repeated."<sup>\*</sup>

Contrast this with the following:

"But as much as I have been able to observe, the benefit of large and repeated bleedings is in most cases far from being clear and unquestionable. One of the worst rheumatisms which I remember immediately succeeded a most profuse bleeding of the nose which continued so long as almost to exhaust the patient and to bring his life in imminent danger."<sup>†</sup>

Doctors clearly did not begin to differ in the second half of the nineteenth century. In fairness it should be stated that Dr. Parr admits that in debilitated subjects, bleeding may do injury and should not be practiced, and that Dr. Heberden expresses the belief that venesection is advantageous in robust persons in the early stage of the disease.

The balance of this paper will be devoted to the care of the patient afflicted with rheumatism. Present knowledge and previous results from practice probably forbid us to employ the term cure. It is scarcely necessary to state that no specific for this malady has been discovered. Those remedies which have been vaunted as specifics, upon being subjected to the test have often proved to be disappointing. Here the patient as well as the disease must receive careful attention. At the onset of an attack the value of eliminants in the vast majority of cases can scarcely be questioned. The reasonably free use of cathartics and diuretics in subjects not greatly debilitated generally affords some relief. The value of diaphoretics has not been determined. It is questionable whether attempts to increase the perspiration which is usually present are attended with benefit. Rest, or at least relief from severe pain should be secured in every acute case. Observation has forced the conviction that this is a most important point in treatment. The idiosyncracies of the patient should be regarded in the selection of an agent for this purpose, but fortunately a large list of remedies of this nature exists from which a satisfactory choice can usually be made. There are no grounds for the belief that the administration of anodynes in sufficient quantity to allay pain predisposes to the involvement of the heart or the membranes of the brain.

Patients suffering from rheumatic fever should be placed in the best possible hygienic surroundings. The sick room should be so sit-

uated that sunlight can reach it at least a part of the day. The temperature should be carefully regulated. Covering should be light but warm. The diet, at least during the more active stage of the disease, should be strictly liquid.

The so-called alkaline treatment of rheumatism, until comparatively recently the most popular method, was often attended with good results, but its failures were lamentably frequent, and the persistent use of these preparations was followed by digestive disturbances and anæmia, which rendered convalescence protracted and doubtless increased the dangers to life which normally attend the disease. It has been claimed that the use of alkalies assisted materially in preventing the more serious complications, especially endocarditis. Notwithstanding that considerable evidence has been furnished in support of this claim it cannot be regarded as clearly established.

The alkaline treatment has to a great extent been superseded by that of the salicylates. Salicylic acid was for a time claimed to be almost, if not quite, as much a specific in the cure of this malady as quinine is in malarial poisoning. Though the results following the use of the salicylates have not equalled those predicted, it is safe to assert that they have been more satisfactory, or rather less disappointing than those of any other agent known to the profession.

Salicylates given early and in sufficient doses will not infrequently arrest what promises to be an attack of rheumatic fever, but in many cases, although some relief may be obtained largely owing to the analgesic properties of the medicine, a cure is not effected. It is in this class of cases that most of the abuses of the drug take place, for the continued use of it in considerable doses after the pronounced physiological effects have been obtained is clearly an abuse. The remedy, in persons not greatly debilitated may, in fact should, be given freely during the first day or two, the effects observed, and it either suspended or continued in greatly diminished doses. Observation has convinced me that the greatest injury from these drugs is produced by the free and prolonged use of the various proprietary so-called rheumatic cures, probably all of which owe whatever virtue they possess to the presence of the salicylates.

Antipyrin, acetanilide and phenacetin, though possessing desirable analgesic properties, should probably, owing to their depressing effects, have no place in the treatment of this disease.

It may be safely asserted that the present method of treatment of rheumatism is more successful in all respects than that pursued before the introduction of the salicylates though many cases are met with which cannot tolerate the medicine. Further, it is not unusual to find pa-

<sup>\*</sup>London Medical Dictionary, Bartholomew Parr, M. D., 1808.

<sup>†</sup>Commentaries on the History and Cure of Diseases, Wm. Heberden, M. D., London, 1802.



tients who can take the remedy in considerable or even in large doses without securing any decided relief. Some of these cases yield readily to the alkaline treatment which should be resorted to when the salicylates cannot be borne or when they fail to produce their desired effects. It has been asserted that meningeal and cardiac complications are more likely to occur under the salicylate than under the alkaline treatment, but evidence sufficient to sustain this claim has not been furnished.

In the present state of knowledge medicine has no more power to prevent involvement of the heart or of the meninges, than it has to insure protection against the invasion of an additional joint.

From our present knowledge the conclusion seems warrantable that if sufferers from this disease are placed in the best available hygienic surroundings, subjected to early and effectual elimination from the bowels and kidneys, restricted to a bland nutritious diet, especially during the acute stage, relieved of severe pain by the administration of anodynes in suitable doses and brought fully and promptly under the influence of one of the salicylates, preferably of sodium or strontium, or in case these cannot be tolerated, one of the alkaline carbonates, they will be at least furnished with the best means at our command for promoting recovery, means which will frequently effect a speedy and satisfactory cure.

In conclusion, I beg to report the following cases, which, to some extent at least, seems to support the theory of the infectious nature of the disease.

Early in September, 1898, Mrs. ———, about 69 years of age, was suddenly seized with severe pain in the shoulder, elbow and knee and ankle joints, attended early with some swelling. Temperature 103° F. on the first day. Within less than twenty-four hours her husband, about five years her senior, presented the same symptoms, probably with a shade less of severity. At the end of the first week meningeal complications appeared in the case of Mrs. ———, terminating in death on the twelfth day. Mr. ———, after a tedious illness of three months, during which time there were two attacks of lobar pneumonia at an interval of thirty days, the right lung involved in the first, and the left in the second invasion, recovered sufficiently to permit him to go south. He returned late in the spring of 1899, in fair general condition, though fingers and hands are somewhat stiffened. The salicylates were not well borne by either of these patients, a few grains causing gastric disturbance and producing physiological effects.

The points of interest in these cases thus briefly reported are the age attained by the patients without suffering from the disease, or, in fact, seriously from any other, the season of the

attack, usually the healthiest and most pleasant of the year, in this climate, and the sudden onset dating almost from the same hour in both cases. It may be added that neither of the patients gave any history of exposure and the hygienic environment was apparently faultless.

#### A FEW NOTES ON FUNCTIONAL DISEASE OF THE STOMACH. DIAGNOSIS AND TREATMENT.\*

BY J. W. ANDREWS, M. D.,

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In a subject so vast as functional diseases of the stomach, I cannot in one short paper do more than make a few observations. In my student days I used to observe with some degree of wonderment that students would climb over each other to see some capital operation, an operation that perhaps many of them would never perform, and many more would not perform it until they had been in practice a decade or more. When the professor of general medicine would make his appearance and begin talking about dyspepsia, or some other stomach disease, these same students would quietly one by one leave the room. As I have attended our medical associations. I have thought that as "men are only boys grown tall" so physicians are only medical students after all, and we have observed the same thing right here that we used to observe in the medical student. Announce the reading of a paper on hysteromyomectomy, and then observe the attention and interest taken, although not one in ten of the physicians present ever have or ever will perform the operation; but announce a paper on gastric hyperchlorhydria, and then observe the number of empty seats.

I am a general practitioner, and do general office business, and while I have not the statistics to prove what I now assert, yet I believe that one-half of the patients that consult me in my office are suffering with some disease due directly or indirectly to some abnormal condition of the metabolism of nutrition.

There is no class of diseases that can be more successfully and scientifically treated than functional diseases of the stomach, and yet nine physicians out of every ten will diagnose the case after asking a few questions, and then will prescribe pepsin or peptenzyme, or possibly HCl. The latter may do a great deal of good or a great deal of harm, according as it is indicated or not.

No patient applying to a physician for help in consequence of stomach ailment should be dismissed with any such slipshod manner as this, unless he is merely suffering with a slight attack of indigestion. It is as unscientific to try to diagnose stomach diseases without an analysis

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of the stomach contents, as it is to try to diagnose renal diseases without a chemical and microscopic examination of the urine.

Normal digestion requires the presence of pepsin, lab-ferment and HCl.

It does not matter very materially as to the quantity of pepsin provided the quantity is not too small, and it is one of the rarest conditions to find a stomach deficient in pepsin.

It is much less rare to find a stomach deficient in lab-ferment, and very common to find it deficient in HCl. The pepsin is practically inert except in the presence of HCl, and it matters not what the quantity of pepsin may be, digestion of the albuminous substances will not take place if HCl be absent.

On the other hand the process of digestion will be much interfered with if there be an excess of HCl. If there be an excess of HCl it is not uncommon to find severe pain in the stomach three or four hours after eating, because the presence of the free acid in the empty stomach will produce pain more or less severe. This is an important symptom when present, but it is by no means constant and may easily be confounded with pain arising from other sources. I once knew quite an able physician to diagnose this condition hepatic colic; he was planning for an operation for gall stones, when a careful analysis of a specimen taken from the empty stomach revealed the real condition of the patient and appropriate treatment cured him.

In the normal stomach as soon as food is taken the secretion of HCl begins and it unites with the nitrogenous elements of the food forming a compound known as the acid salts, or the combined HCl. This combining process continues in the ordinary healthy stomach until the nitrogenous parts of the meal are saturated, then the secretion of the acid continues until there is a small excess giving free HCl. This is normal, but if now the secretion of HCl continues, we have an excess of this acid known as hyperacidity, or hyperchlorhydria, producing pain, and a burning, gnawing sensation in the stomach, and digestion becomes labored, if it does not cease altogether. An alkali administered at this time will neutralize the acid and give temporary relief. The laity have learned this, and often take one-half drachm or one drachm of bicarbonate of soda to alleviate the above named symptoms. I have already said that pepsin in a very large number of cases is present in a sufficient quantity, but that it is inert except in the presence of HCl. The absence of this acid, or when it is secreted in an insufficient amount, is a fruitful source of indigestion.

In my experience of the analysis of the stomach contents I have found this to be the most frequent cause of stomach disorder. The total acidity of the stomach contents should be from

40 to 60, and the free HCl from one-tenth to two-tenths of one per cent., whereas I have frequently found total acidity to be from ten to thirty with an entire absence of free HCl. When this condition is present, the treatment is clearly indicated, viz: the administration of HCl, and such other therapeutic measures (to be hereafter mentioned) as will increase the secretion of this acid to its normal standard.

Another rather frequent cause of disordered digestion is deficient motility of the stomach. The stomach is an organ furnished with three sets of muscular fibers, longitudinal, circular and oblique, and the presence of food in this organ stimulates these muscular fibers to activity, and their combined action produces a churning-like action of the stomach, agitates the food contained within it, tosses it about from side to side, and thus produces the admixture of the acidulated pepsin with the food.

When from any cause the muscular activity is below par, we have decreased motility, and the food failing to be properly mixed with the digestive ferments is not digested, and will undergo an unhealthy fermentative process, producing butyric and other organic acids, and consequently sour and offensive cructations, and the food partially digested will remain in the stomach, sometimes for many hours, after the time when it should have been propelled onward into the intestines.

I think the most frequent cause of deficient motility of the stomach is dilatation of this organ. In the condition of dilatation, there are two reasons for the retention of the food in the stomach beyond the normal period of digestion:

- 1st. The lack of normal muscular activity.
- 2nd. The bagging down of the stomach, forming a pouch or a pocket, in which the food remains. There have been several methods devised for determining the size of the stomach, or, in other words, determining whether the stomach is dilated or not, and to what extent, but I believe the method most easily applied is that devised by Dr. Turck, of Chicago, with what is known as the geromele. This is a flexible metallic rod with a sponge attached to the end, and caused to revolve within a rubber tube by means of a carpenter's ordinary brace. The spongetipped flexible rod plays over the interior wall of the stomach, and can be distinctly felt by placing the flat of the hand over the abdomen, and thus the stomach can be very accurately outlined. This same method is also very valuable in stimulating the stomach to increased muscular contraction.

But indigestion that is caused primarily by a dilated stomach is exceedingly difficult to correct except by surgical means. By surgical means I refer to the operation of gastro-enterostomy. I know of no means that will so surely correct the errors of digestion resulting from dil-

atation and bagging of the stomach as above described as this operation, providing the operation does not prove fatal, but the gravity of the operation deters most surgeons from performing it.

A few years ago Dr. Senn, of Chicago, was a strong advocate of gastro-enterostomy for this condition, but it is not within the province of this paper to discuss organic diseases of the stomach, or its surgery, and I will therefore close my remarks in reference to this operation by citing the fact that one of our members, Dr. Will Mayo, of Rochester, can today show a better record in this operation than any other operator of whom I know, he having had one hundred per cent of recoveries.

There is another form of indigestion which deserves our careful attention: it is that which is brought about by eating too rapidly, too often, too much, or improper articles of food, or it may be due to one or all of these causes. It is simply labored digestion. We find a patient thus suffering with headache, a furred tongue, a bad taste in the mouth of a morning, foul breath, either diarrhoea or constipation, and mentally dull. Examination of the stomach contents shows a normal total acidity, and a normal amount of free HCl and other digestive ferments, and yet lavage, even five or six hours after a meal will bring up particles of food undigested, or only partially digested.

In the treatment of all these diseases of the stomach I have referred to, of first importance is a well regulated diet, and without it medicine will be practically useless, and I think we frequently err in having our patients eat too often. The Germans (and many American physicians follow the teaching of the German), feed a weak stomach five or six times daily giving of course light diet. I believe this is a mistake. The stomach like other organs of the body needs periods of rest in order to functionate normally and when food, even though it be very light, is taken into the stomach five times daily the stomach has no period of rest.

Dr. Turck, of Chicago, who is an authority on diseases of the stomach, can today exhibit many patients who have gained in weight, and had their normal digestion restored on two meals only per day.

Of all drugs used in the treatment of stomach diseases HCl is the most valuable. As above stated, I believe the most frequent abnormality in stomach diseases is either subacidity or anacidity, and in either of these conditions no drug will take the place of HCl.

A therapeutic measure of great value in all these functional diseases of the stomach is lavage, but this valuable agent may easily be abused. When it is indicated it will do much good in a very short time, but if too long continued it will not only fail to do good, but will do harm. It

will do harm especially by washing away material which if left in the stomach would become nutritive. Patients will always lose flesh under the long continued use of lavage. Ewald says if lavage will do good at all it will do good speedily.

A most excellent substitute for lavage is the injection of heated air into the stomach. The method of doing this is very simple and easy. By means of a double rubber bulb a continuous current of air can be made to pass through a gallon bottle of hot water, and thence through a double rubber tube into the stomach through the one tube, and out through the other. Oil of cloves, or menthol, or any other medicine can be easily introduced with the current of hot air.

To recapitulate in part, permit me to say in closing that the drugs which are of value in the treatment of functional diseases of the stomach are few in number, and could almost or quite be counted on the fingers of one hand. Of course I do not include those disturbances of the stomach which are purely neurotic, or reflex, for in this of course the cause and not the effect should receive the first attention of the physician.

Perhaps in the treatment of the class of diseases under consideration in this paper HCl should receive the first place, because subacidity or anacidity is a most frequent cause, and this being due to the deficient secretion of HCl, its object should be not only to supply the deficiency, but to stimulate the gastric glands to an increased secretion of HCl. This indication can be met by the judicious use of lavage. The lavage should be given, preferably, not very long before the ingestion of a meal, and should be given by using normal saline solution at a temperature of 100 degrees, and continued each time until the water comes from the stomach clear. The normal saline has a two-fold purpose:

1st. It will stimulate the gastric glands to increased secretion of HCl.

2nd. A portion of it will be absorbed, and will contribute to the production of HCl.

Pepsin, peptenzyme, peptic essence, and all their mixtures and compounds have been and are today decidedly overestimated as to their therapeutic value.

An alkali, notably bicarbonate of soda, given before meals will excite the gastric glands to an increase of HCl. This is explained upon the principle of an acid on one side, and an alkali on the other side of an animal membrane favoring osmosis.

When the administration of HCl is indicated as above, it should be given in at least one-half drachm doses, (I mean of course the dilute acid), in not less than one-half glass of water, and preferably a glass of water from twenty minutes to one-half hour after eating.

The bitter tonics are of value, but should always be given before meals; if given on a full

stomach it has been found they will to some extent retard digestion. A valuable prescription when there is much indigestion in the case of subacidity is the following:

℞ Bicarbonate of soda, ℥viii.  
 Infusion of quassia, ℥viii.

S. Tablespoonful in a little water twenty minutes before eating.

When the indigestion is due to hyperacidity or hyperchlorhydria, quite a different method of treatment is indicated, but as I have before said this is rather a rare condition. For the past few years I have not treated any stomach disease (except it might be a case of acute indigestion) without giving the patient a trial meal, removing it from the stomach while in the process of digestion, and analyzing or causing the same to be analyzed, and I have found hyperacidity in but a small percentage of my cases. But to go any more into detail of the treatment of these diseases will make my paper too long, and I will close by again trying to impress upon you what I believe to be a fact, viz: that in instituting treatment for these diseases, a strict regulation of the diet is of first importance.

I do not say to a patient, eat what you think will agree with you, for he never knows what he thinks, nor do I simply say, you must eat a light diet, for he does not know what light diet is; but I give him written or typewritten instructions as to what he shall eat, when he shall eat, and how much he shall eat, what he shall drink, when he shall drink, and how much he shall drink.

### SOME OF THE LITTLE THINGS.\*

BY CHARLES H. NORRED, M. D.,

Minneapolis.

I have for many years been impressed with the fact that we were sometimes annoyed with very unsightly and inconvenient deformities for the reason that we overlooked the small or relatively unimportant things; this is my apology for making mention of "some of the little things."

For instance: A skillful surgeon may in a skillful manner apply a plaster cast to a broken limb. The parts are in proper apposition, and the general contour is all that could be desired. The next time he inspects the case he finds a very unsightly deformity because he neglected to renew the cast as soon as the swelling had subsided or the limb otherwise shrunken; the skill originally displayed has been worse than lost in his negligence, and the deformity will be a very sultry walking advertisement for the surgeon, notwithstanding the fact that he may be one of our most respected and esteemed members, and it could have been avoided by a very little timely

attention, his patient spared the deformity, and he, possibly, a malpractice suit.

Again, an individual comes to us. We find he or she has an abscess in the palm of the hand. We open it up, with commendable skill and knowledge, and wash it out with peroxide of hydrogen, or something better if possible, and make it as nearly aseptic as possible; dress it with bichloride gauze, etc. The hand gets well, but the fingers are permanently flexed into the palm, and the hand is worthless. Of course we can say that it was not our fault; that the destruction of tissue was so extensive that the result could not be avoided. In the first place, many times much of the destruction could have been prevented by more frequently dressing it and keeping the hand and wound as nearly aseptic as could be, and finally, as the hand recovers, thoroughly relax your patient with chloroform (and I have found sometimes the hypodermic use of pilocarpine useful as an adjunct), and straighten or extend the hand and place it in a plaster cast and make a trap door, through which you may continue to give proper treatment, carefully watching the cast, and if it becomes loose or otherwise deformed, replace it with a new one. For a while it will give your patient great pain, which I control with the hypodermic use of morphine and atropine. In fact, unless contraindicated, when I use chloroform, I always in surgical cases give morphine and atropine before I give chloroform. I need less chloroform, and the effect is much prolonged, and I very seldom have excessive vomiting afterwards. The plaster should be retained some time after the hand has recovered. I usually apply one and cut it open on one edge so that it can be removed and reapplied in a few minutes. It should be worn at night, more especially after the hand has almost entirely recovered. I have for many years treated this kind of a case in this way and the result has been very satisfactory.

Now we may have an injured knee, and if the little things are neglected the victim may be a cripple for life. Many of you, doubtless, have seen such cases where a permanent contracture of muscle and tendons exists. I have a case in point in your presence that was sent to me some time ago. The knee had been injured. The history was meagre; it was at first thought to be rheumatism. I found his knee was flexed to an angle of forty-five degrees, very much swollen, and much tenderness and pain alleged; temperature 104°, and continued so for several days. I gave him chloroform; made four incisions, one on each side of the knee and about two inches below, and one on each side of the knee about two inches above, from which came a large amount of pus. I most thoroughly washed out the openings with peroxide of hydrogen, extended the leg and placed it in a plaster well up the thigh, made the cast snug to overcome muscular

\*Read in the Section of Surgery of the Minnesota State Medical Society June 22, 1899.

contraction and to keep the abscess walls compressed. I then made a long trap-door through the cast, through which I daily dressed the limb. But the destruction of tissue had been so great that it soon became apparent that the patella was necrosing, and I made an incision immediately over the patella, from which came a large amount of pus. Through the incision, by means of a probe, the necrosis could be definitely determined. I kept the incisions open and thoroughly clean inside and out. The temperature remained from 101° to 103° a week or ten days. At the end of three weeks I removed almost the entire patella, and through the opening I passed my finger into the joint between the bones. I at that time discontinued my peroxide, and did not even wash the pus from the cavity from which the patella was removed, but kept the outside clean and dressed with hot bichloride moist gauze cotton compress, and in the meantime was very careful to reapply the cast the entire length of the leg as often as was necessary to preserve a neat fit and a good contour and take good care of the general health of my patient. In about one week the remaining fragments of the patella came away, and recovery was had with no untoward symptom save a decided tendency to a marked contracture and an ugly deformity which threatened to result in crippling the young man for life. I reapplied my cast and continued its use for about six weeks. If it were left over night, without a cast, the contracture would be so extensive as to require an anæsthetic to overcome it. I continued the cast at least two months, then made for him a sole leather splint to place under the knee, extending as low down as the junction of the upper with the middle third of the tibia, and as high as the junction of the lower with the middle third of the femur, and laced up in front. This was worn at night until all tendency to muscular contraction had subsided.

The little things to be observed in this case were:

First. Let nature make her line of demarcation in the patella, whether it be a part or all, and do not officiously surgically interfere.

Second. Do not wash out the joint.

Third. Do not think it too much trouble to readjust the plaster frequently so that an even and continuous pressure will be maintained, that all muscular contraction will be overcome and perfect rest secured. I am very glad to be able to say that, while I have the young man's patella in my pocket, the young man has a new and better one, and a perfect limb in every respect; he has kindly consented to allow you to inspect it. He is in your presence.

Some time since a gentleman came to me unable to extend the fingers of his right hand. I learned that some months previous he had been unfortunate enough to be very severely cut across

the back of the hand by plate glass and that when he thought his hand was well it refused to open unless he would rest it on the dorsal surface. Then it would fall open. I found on examination that all the tendons had been divided at or near midway between the metacarpo-phalangeal and the carpo-metacarpal articulations. A crescent shaped flap was raised over dorsal surface of the hand, and the tendons were found contracted downward to near the metacarpo-phalangeal articulation, and upward to the annular ligaments. The ends were secured and cut off, brought together and secured by a sterilized, chromated catgut, the flap returned and secured by interrupted silk suture; the wound dressed with boracic acid, bichloride gauze cotton compress; fingers and hand overextended and maintained in that position by means of a plaster dressing extending from the finger tips to the middle of the forearm. Pain and muscular contraction was overcome and absolute rest maintained by the use of pilocarpine, morphia sulphate and atropine, and a relaxed condition of the bowels maintained by salines.

At the end of the second week I removed the dressings and found, as I expected, strong adhesions over the entire dorsal surface of the hand, to which I applied the galvanic current, positive pole, over site of adhesions, 5 m., about five minutes, and returned the same dressing. After that I applied the electricity in the same manner twice a week for several weeks and had flexion and extension of the fingers attempted by the patient during the time of the application of the electricity. The gentleman is a printer, and also uses a guitar, and in six weeks after the operation he was using his hand setting type and making music with his guitar, and has at this time a good useful hand. The gentleman is in the room and has kindly consented to exhibit his hand, of which he is justly proud.

The "little thing" omitted in this case was this: I found in the sheath of the tendon of the extensor communis digitorum about one inch of the reproduced tendon extending from below upwards, to which I attached the descending end of the same tendon. I think I should have gone further down and secured the end of the original tendon, for the reason that the new tendon was too weak to antagonize the full grown flexor brevis minimi digiti, and the result is a slight deformity in the way of a contracture of the latter.

The stomachless woman of Dr. Carl Schlat-ter, of Zurich, continued to do well, gained in weight, and seemed to be enjoying herself for one year. She was kept in the hospital and under observation, not because it was necessary on her account, but because it was desired to study her case in the interest of physiological and chemical science. She died from multiple carcinomatous metastases.

## THE REACTION OF A CASE OF TETANUS TO ANTITETANIC SERUM.

BY EDWARD NEWTON FLINT, M. D.,

Specialist in Mental and Nervous Diseases; Assistant Neurologist, Minneapolis College of Physicians and Surgeons (Medical Department of Hamline University).

Minneapolis.

I was called, on a recent Monday evening, to attend Cora H., aged twenty-one years, who is rather anæmic and troubled with scanty and irregular menstruation, and whose maternal grandfather died of tetanus. Previous to the attack she had always enjoyed good health.

Five days prior to my visit the patient stepped upon a slightly rusted nail which penetrated her thin-soled shoe and stocking. She said the wound was not a deep one, and it bled but slightly.

When I saw her the girl complained of severe pain, of a spasmodic or intermittent character, extending along the antero-external aspect of the left leg. I found that the wound, which was on the plantar surface of the foot, just posterior to the fourth metatarso-phalangeal articulation, had healed perfectly. There was no local redness or pain, and the site of the puncture was not tender on pressure, although the foot was noticeably swollen. I directed hot antiseptic dressings to be applied, and left her for the night. The following morning I was notified not to call again as the girl was all right, but that evening while absent from my office I was again sent for. I visited the patient at 8:30 on Wednesday morning, when I was informed that on the afternoon before (Tuesday) severe pains had appeared in the foot and leg, shooting up the thigh and abdomen as far as the umbilicus. There was some slight soreness of the facial muscles, but the inferior maxilla seemed to be freely movable. Unfortunately, I neglected to note the temperature at the time.

I at once opened the wound freely and made a thorough application of pure carbolic acid. Hot antiseptic dressings were then applied, and I went down town in search of antitetanic serum. Three tubes of Parke, Davis & Co.'s serum were kindly procured for me by a representative of the house, and at 10:30 a. m., I injected 10 cc., under elaborate antiseptic precautions, into the left deltoid.

At the moment of injection the pains in the leg, thigh and side were severe. The foot became inverted, followed by clonic spasms of the leg and thigh muscles, and eventually by two marked attacks of pleurosthotonos; the mother said that similar seizures had occurred on two or three occasions during my absence in quest of the serum. The jaw was not locked, but there was considerable soreness of the facial and cervical muscles, and the patient conversed through

her closed teeth. The temperature at the time of injection was 101° F.

I wish to state that the whole family were very nervous and excited to the verge of hysteria, and although the patient was the calmest member of the household, even she was excessively anxious about her condition. Under the tension of the moment she manifested a curious train of irrelevant nervous phenomena that were in no way characteristic of tetanus, such as wringing her hands, tossing and rolling in bed and plying her attendants with an uninterrupted series of excited and anxious questions. There was no perceptible change in the patient's physical state until about noon, when a profuse perspiration broke out and she became quiet.

I left the house for a short period, returning at 1:30 p. m., when I found that a marvellous change had taken place in all of the symptoms. I use the word marvellous advisedly, for it seemed to me that no other adjective would indicate so expressively the remarkable character of the change that I then observed. All of the spasmodic phenomena had subsided; the pain had disappeared, save a little in the leg, which was gone by nightfall. No further treatment was applied, and the patient rapidly recovered without any return of tetanic symptoms. Six days later she joined an excursion party down the river, and was on her feet an entire day, without perceiving the least evidence of pain in the injured member.

Carnot has recently called attention to the value of hypodermic injections of sterilized gelatin solutions for the purpose of increasing coagulability of the blood in general. He also mentions that the local use of these solutions is exceedingly valuable in controlling capillary or oozing hemorrhage, where compresses fail to produce the results desired, and this substance often suffices when preparations of iron and the acids fail. When employed as an injection, it is absolutely essential that the solution is sterile. The solution used by Carnot is gelatin 12 drachms, chloride of calcium  $2\frac{1}{2}$  drachms, and water one quart. One or two ounces of this solution is given under the skin into the loose subcutaneous tissues of the back or thighs. It is said to act very speedily in causing coagulation at the bleeding point. When the solution is applied to the exposed bleeding points, care must be taken after the gelatin is applied to prevent putrefactive changes. This is especially so in cases of nasal wounds. There is some danger with the hypodermic injections of producing hypercoagulability of the blood. Carnot thinks that when it is necessary to give such injections it is best to give the calcium chloride itself.—Therapeutic Gazette.

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## CANNABIS INDICA.

Recent improvements in the preparation of drugs by which either through chemical assay or physiological experimentation they are brought to a uniform standard of strength, will make it possible to use certain remedies that have been shelved by the medical profession, not because the remedies had no appropriate place in therapeutics, but because it was impossible to get satisfactory and constant results owing to the great variation in the strength of the preparations on the market. It would sometimes happen that the preparation of a manufacturer would at one time show the full strength expected and the next time prove to be practically inert; and this might happen without any fault on the part of the manufacturer himself, who might have procured the best crude drugs in the market as far as a liberal purchase price and skill in selection could procure them, have manufactured his preparation in the usual way and yet in the end have put out a medicine that was practically useless.

Of all the drugs of uncertain strength there is probably none where this feature is more striking than is the case with cannabis Indica; it is uncertainty of strength alone that has prevented the Indian hemp from taking a high place in materia medica, instead of its actual position at the foot of the ladder. There is in the first place a halo of romance about the drug, both because of the reputation of its achievements under the name of haschisch and because of its curious effects upon mind and body, effects that seem to

promise wonderful therapeutic results in a class of cases which the art of medicine has made little impression upon. Macbeth's question "Canst thou minister to a mind diseased," it would seem safe to answer in the affirmative with a drug at hand that can so far disconnet body and mind that the person under its influence feels himself separated from his own personality, and looks on at it were at his own doings with the feelings of a mere spectator. A drug that entirely upsets the ordinary relations of time and space, that in one dose gives glimpses of paradise and in another dose brings despair and a desire for suicide, offers fascinating possibilities to the experimental therapist, who has but few drugs that produce psychological phenomena at all, and none whose effects are equal or similar to those of cannabis Indica.

In every class in the medical school the study of the peculiar properties of haschisch is certain to be followed by voluntary experiments on the part of the students; a common experience is that the drug is taken first in the moderate full dose of one or two grains; this proving ineffective, as is often the case, the dose is increased slowly up to four or five grains, and then in the absence of any effect, with growing impatience and contempt for the inertness of the medicine a jump is made, perhaps to ten or twelve grains, with the result that a most unpleasant state of despondency and gloom is produced. The whole impression thus made upon the mind of the student is not one that is likely to encourage him to use it as a medicine.

All this uncertainty of dosage is now done away with by the introduction into pharmacology of the physiological test upon animals of those drugs that resist chemical analysis. The symptoms of a full dose of cannabis Indica are so well marked that the strength of each package of the crude drug may be positively determined. With a preparation of standard strength in his hands the physician will find many uses for cannabis, some of which are gaps in therapeutics that are filled by no other drug. Among these is its use as a succedaneum for opium. Here it fills a long-felt want, for it is a great puzzle sometimes to know how to relieve a patient who has an idiosyncrasy that forbids the use of opium and who is suffering severe pain. The newly discovered antipyretics and analgesics of the coal tar

group, antipyrin, antifebrin, phenacetine and the like will help out, for instance in certain cases of neuralgia; codeia, too, will answer where a feeble anodyne effect is all that is required, as for instance, in cough mixtures; but cannabis Indica has real narcotic power, not to be compared with that of opium, but still sufficient to relieve severe pain, and this power is manifested more strongly in certain directions than in others; for instance, the drug has a decidedly sedative effect upon the stomach and strikingly relieves the pains arising from gastralgia, gastric ulcer and other diseases of the organ. So, too, with the disorders of the sexual apparatus of the female; dysmenorrhœa, ovarian pain and the suffering that sometimes accompanies endometritis are all mitigated by cannabis Indica. In menorrhagia or metrorrhagia it not only relieves pain but also restrains hemorrhage. It is useful too, in painful affections of the bladder. Its successful use as an anodyne is also reported in a variety of other diseases attended with pain, among which may be mentioned neuritis, herpes zoster and the pains of locomotor ataxia.

In his address, delivered last August before the Minnesota State Medical Society, entitled "The Physiological and Medical Treatment of Insomnia," Dr. John V. Shoemaker gave a high place, as an hypnotic, to cannabis Indica, a place perhaps second only to that of paraldehyde. He extolled it particularly in cases where sleeplessness is caused by pain or spasm, and said that he had sometimes known it to succeed where opium had failed. It is certainly not uncommon to find people who are not made sleepy by opium, on the contrary, become persistently wakeful under the influence of the drug. It follows from what has been already stated, that cannabis acts particularly well when the sleeplessness is due to an affection of the stomach or bowels or to disease of the female sexual organs. According to Russell Reynolds, the effect is also peculiarly happy in the wakefulness of old men; it also quiets the delirium of fevers, particularly typhoid, and has a valuable sedative effect in delirium tremens.

A few special uses of cannabis Indica require particular mention because it is sometimes effective in relieving certain conditions that are the despair of the medical man. One of these is migraine, or paroxysmal nervous headache, a disease that usually had to be given up as incur-

able before the days of antipyrin, antifebrin and their congeners which have given relief to many sufferers from "sick headache." Before the coal tar products came along the most successful drug in the treatment of migraine was cannabis Indica. Not so much that it had power to relieve the single attack, but its continued use frequently either diminished the number of the attacks or stopped them altogether. At the present time, if none of the coal tar antipyretics succeed in relieving a case of migraine, the next best remedy is cannabis Indica.

Psychic impotence is a very troublesome affection to deal with. Moral support often fails and when recourse must be had to drugs cannabis is by far the surest hold. Its action is a double one, first as a moderate aphrodisiac and second, by its effect upon the mind giving the patient that hopefulness which is all he needs. Bad dreams are a thing that medicine is seldom called upon to relieve. It has been claimed that the Indian hemp has power over them also, substituting for the night-mare either pleasant dreams or oblivion.

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## REPORTS OF SOCIETIES.

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### MINNESOTA ACADEMY OF MEDICINE.

R. O. BEARD, M. D., Secretary.

Annual meeting, Wednesday evening, October 11, 1899, at the Hotel Ryan, St. Paul; the president, Dr. C. G. Weston, in the chair.

The annual election was held and resulted in the election of Dr. C. Eugene Riggs, of St. Paul, as president; Dr. H. M. Bracken, of Minneapolis, as vice-president; Dr. R. O. Beard, of Minneapolis, as secretary-treasurer; Dr. J. L. Rothrock, of St. Paul, Dr. L. A. Nippert, of Minneapolis, and Dr. A. J. Gillette, of St. Paul, as the executive committee; Dr. J. W. Little, of Minneapolis, Dr. J. H. Dunn, of Minneapolis, Dr. A. McLaren, of St. Paul, Dr. J. W. Bell, of Minneapolis, and Dr. Talbot Jones, of St. Paul, as governing board.

Dr. W. A. Jones, of Minneapolis, presented a paper entitled, "Nutritional Diseases of the Spinal Cord: Paraplegias, with Recovery."

The following is an abstract of the paper:

The author discusses the varieties of paraplegias and defends the term nutritional in opposition to the term functional. He believes that nutritional disturbances may, and often do, become organic while functional conditions do not.

Nutritional disturbances are more readily appreciated if the neuron theory is accepted. A sys-



tem made up of isolated and independent elements, depending upon a certain native regenerative capacity, with powers of resistance which vary with the individual, and which show such marked alterations in form and function under fatigue, lead one to infer that this delicate tissue is apt to become unstable, particularly in an individual of inherited neuropathic tendencies, who is over-worked mentally or physically, the victim of autointoxication, infections either bacteriological or mineral, or poisons of other sorts, as well as those who are syphilitic or who have been previously injured.

The symptoms are tire, weakness, incoördination, exaggerated reflexes and minor sensory disturbances, without muscular atrophy, pain or bladder or rectal symptoms.

Five cases are reported in which complete recovery occurred in four cases of complete paraplegia, with a practical recovery in the fifth case.

The treatment consisted of rest, massage, general faradism and such constitutional remedies as were indicated to promote nutrition.

The discussion of the paper was opened by Dr. C. E. Riggs, of St. Paul. He expressed his belief that we do not sufficiently appreciate the effect of neurasthenic states upon organic conditions in the cord. He was somewhat sceptical of the nutritional quality of paralyzes. He thought that Dr. Jones had been particularly fortunate in the results of his cases. Certain forms of pseudo-paralysis were undoubtedly hysterical. He cited a case in the clinic of the younger Charcot which appeared to be a true paralysis, but which, after resisting medical treatment, recovered upon a visit to Lourdes. He wished to emphasize the importance of neurasthenic conditions. He believed they often constituted the gateway to organic disease. Functional and organic disorders were frequently imposed upon each other. General practitioners, as well as specialists, should regard this relationship and carefully consider these cases of exhaustion.

Dr. Haldor Snévé, of St. Paul, said that he had been greatly pleased with Dr. Jones' scholarly paper. He applauded the attempt to lead us to a simpler pathology. He believed that his conception of the field of nutritional disease was a happy one. The effect of toxines upon the neuron was an undoubted one and its functional disturbance was common. But to draw the line between these nutritional disorders and organic disease was very difficult. He wished to emphasize the influence of the idea upon the development of the neuroses. He cited cases, in illustration of this fact, relieved by hypnotism. In these conceptions of the nutritional disorders of the neuron we must consider the general state of the nutrition. Many evidences are seen of the influence of ideas upon the phenomena of disordered nutrition at large. He discussed the cases

described by Dr. Jones and offered some suggestions as to their pathology. Undoubtedly many cases of temporary functional disease will simulate organic lesion.

Dr. C. H. Hunter, of Minneapolis, inquired how recovery could be promised where diagnostic distinctions are so difficult.

Dr. A. W. Abbott, of Minneapolis, asked how these cases, believed to be hysterical and yet associated with supposed organic lesions, can so speedily recover as they often do. He cited an extreme case of a young girl in which complete contractures of both limbs were present and in which the limbs were emaciated, for whom amputation was proposed, but who under strong psychical representations walked in two weeks to a distance.

Dr. W. A. Jones, in closing the discussion, said that he had purposely excluded hysterical cases in order to form a group of nutritional diseases independent of those disorders which are incident to idea. It was certainly true that the neuron was subject to structural and chemical changes which lead up to progressive degeneration, but which are nevertheless susceptible at some stages to regeneration.

Although actual degenerative changes in nerve and muscle may have occurred in certain of these cases there remains still a sufficient degree of irritability to be sensible to stimulation and responsive to suggestion.

Upon motion the Academy adjourned.

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## MISCELLANY.

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### THE NOVEMBER MAGAZINES.

The Atlantic opens with "The Case of the Negro," by Booker T. Washington, the pre-eminent leader in the affairs of his race, and the article is the most important contribution yet made to this vexed question. Hugh Clifford, British resident at Pahang, Malay States, contributes a valuable article on the Malay tribes, which throws much and needed light on our Philippine question. Charles A. Conant contributes a very valuable article entitled "Can New Openings be Found for Capital?" He answers the question in the affirmative, and gives his reader a view of the world's affairs not often taken even by men of large business enterprises. Rollin Lynde Hartt, whose lively and picturesque papers on Montana and New England Hill Towns have been so amusing and instructive, and caused such lively discussions, treats of The Ohioans in an equally entertaining and outspoken vein of fact and fun, description and criticism.

Scribner contains some very fine articles, the principal of which perhaps is by President Hadley, of Yale, on "The Formation and Control of

Trusts." He shows why they came into existence, under what conditions they can live, and points out the causes tending toward their limitation as speculative enterprises. In view of the rant many politicians indulge in when dealing with the subject, this article is of very great value. Sylvester Baxter writes of "The Great November Storm of 1898," whose wide-spread ruin on the New England coast has, fortunately, never been equalled. Mrs. John Drew's "Autobiographical Sketch," concluded in this issue, contains impressions and anecdotes of Booth, Jefferson, Florence, Murdock, Macready, Davenport, and others. Among the illustrations are rare portraits and old play bills. There are many other excellent articles.

The Review of Reviews is, in many respects, the ablest number ever issued of this valuable magazine; and its table of contents will serve to show how great a factor in public education such a magazine may become. Dr. Shaw, its editor, deals at length with the present African war, and shows the errors of both sides. In the course of his article he gives a lengthy communication from Mr. Stead, who is a very severe critic of England's course in forcing the war upon the Boers. Mr. Stead has a very full Character Sketch of Cecil J. Rhodes, who is so closely identified with the growth of South Africa. This sketch is one of the best things, at least in this line, that Mr. Stead has ever written. Its subject leads him to deal with a few very important side issues of great importance to the world to-day. Such, for instance, is his own and Mr. Rhodes' views of what a millionaire should do with his money, and, in fact, with himself. Next in importance, if it is not to be placed before them, is Frederick W. Holls' account of The Hague conference, in which Mr. Holls took so conspicuous a part. It is within bounds to say that no such article has yet appeared in any magazine; and it is a great pleasure for the student of current affairs to read such weighty words concerning so great an event. Dr. Shurman, of the Philippine Commission, discusses "The Problem of Territorial Expansion," and, of course, he does so with great force. And there are other valuable articles, comments, etc., in this issue; and its illustrations and maps are something more than mere pictures. Surely, this is a great issue of a great magazine.

The Outlook's Magazine Number is also one of exceptional interest and value. Dr. Shurman contributes to the number, in the form of an interview, his views of the Philippine question, and it is perhaps not unsafe to say that he foreshadows the views and course of the administration upon the subject. A sketch, with portraits of the two leaders in South African War, Sir Redvers Buller and General Joubert, is very timely and interesting. An account of the open-

ing of Siberia by the great railway has special interest to every resident of the Northwest, for no two countries in the world are more alike, in climate and soil, than Siberia and the Northwest, and doubtless in a few years the history of the settlement and growth of the Northwest will have been repeated along this great railway. Minnesota is doubly honored in this number: First, in an interesting account of the work and career of Bishop Whipple, and, again, in "The Northern Farm," which is a rosy, but mainly truthful, picture of Minnesota rural life, by Charles B. Spahr, who is writing for the Outlook a series of articles on "American Working People." But this is hardly half of the good things in the issue. The Outlook is an admirable family journal, and its monthly magazine number enhances its value.

The New Lippincott opens with a complete historical novel by Mark Lee Luther, dealing with revolutionary times and characters. Sarah Orne Jewett also contributes a short story, which is almost a complete novel. It deals with Irish character, and is fully up to the high standard of Miss Jewett's work. Another story, dealing with Christian Science, is bright and amusing.

In addition to the stories there are several admirable papers in the issue. Among them are "The Last Victory of 'Old Ironsides,'" "Old-Age Pensions, From a Socialist's Stand-Point," and "An Unwritten Chapter in our Relation with Spain."

#### AN APPENDICITIS OPERATION BY ROBERT T. MORRIS.

The following extract from a clinical lecture delivered at the New York Post Graduate Medical School and published in the *Indiana Medical Journal*, shows that Dr. Morris is not far behind the late Lawson Tait in his estimate of his own skill and in his contempt for those who differ from him in practice: The second patient to-day represents an acute case in the midst of trouble. The patient is nineteen years of age. Five days ago he began his first attack of appendicitis with typical symptoms of nausea, vomiting and abdominal tenderness. His temperature has been elevated from the first, but that is of no consequence in helping us to determine the severity of an attack of appendicitis. It simply indicates that he has mixed bacterial infection instead of pure colon bacillus infection. Some of the most desperate cases of appendicitis with colon bacillus infection have a temperature little above normal. Colon bacillus temperature usually ranges within one degree on either side of one hundred degrees Fahrenheit. The high temperature in this case gives no indication of the condition of affairs about the appendix, but yesterday the patient had rigors. That usually means pus formation. On

examination I find a mass of exudate in the appendix region. The incision in this case with abscess is twice the length of the incision in the interval case. The reason for that is because I wish to have pus escape easily as rapidly as it is freed from the cavity. Adhesions are now freely separated with the finger, and no regard is paid to avoiding the general peritoneal cavity. A great gush of pus now appears. I insert a syringeful of peroxide of hydrogen. It blows out the pus in a foaming mixture. Saline solution is then used for washing away the debris. That leaves the cavity clean, and I proceed to separate all adhesions in a search for multiple abscesses and for the infected appendix. It is fallacious to think that we must protect the normal peritoneum against pus in a case like this. Local hyperleucocytosis is already established, and I doubt if a quart of pus poured into the general peritoneal cavity would do any harm, provided, of course, that we remove most of it again. The idea that we must protect normal peritoneum against pus infection is an old-fashioned bugbear that developed by speculation before we knew about phagocytosis and hyperleucocytosis. Now it is out of date. Under fear of this bugbear, surgeons used to do the most dreadful things to their patients. They used gauze packing, and multiple drainage openings, and made long incisions, and introduced a lot of methods that had a death rate of their own. If surgeons leave out of their practice the methods in appendicitis that have a death rate of their own, it is wonderful how their patients recover. It seems almost impossible to lose an appendicitis patient if we do not inflict upon him methods that have a death rate of their own. I lost one patient at this hospital about the year 1895, from abscess rupturing into the cavity on the night before operation, and he died from suppurative nephritis. I lost another about the year 1889 apparently from thrombosis of the iliac veins. Those are the only two appendicitis patients that I have ever lost at this hospital in more than ten years of service, with appendicitis patients almost constantly under care. It is not due to any merit excepting the habit of not doing the things that kill patients.

The appendix in this case is now brought out through the opening. It is gangrenous at several points, and the whole interior is sloughing. Would this not be a nice mass to leave among adhesions, according to the advice of "simply open the abscess"?

In this case the cæcum is too fragile with infiltration to allow of burying the stump, so a little drainage wick of gauze surrounded by gutta percha is inserted down to the cæcum. The abdominal wound is closed with the exception of the little opening for the drainage wick. You will observe that we have not shocked the pa-

tient by pawing at his inwards. The work has been done expeditiously and with so little disturbance that he has not lost his red cheeks during the operation, and he will not lose his red cheeks to-morrow from infection. He will be bright-eyed, and recovery very different from the patient that we should have if I had pawed at his inwards for an hour, and had then committed taxidermy upon him by stuffing him with gauze. He will not have a post-operative ventral hernia, because the layers of the abdominal wall were accurately and separately sutured. These two typical patients to-day will undoubtedly tell you later that surgical treatment caused them less suffering than medical treatment. In the third edition of my book upon the subject I published letters from an unselected consecutive series of patients who had had all sorts of treatment for appendicitis, and every one of them said that surgical treatment was easier to bear than medical treatment.

#### ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF PHILADELPHIA.

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1900, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1900.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1899 has been awarded to Dr. Robert L. Randolph, of Baltimore, Md., for his essay entitled: "The Regeneration of the Crystalline Lens—An Experimental Study."

THOMAS R. NELSON, M. D.,

Secretary.

#### INTER-COUNTY MEDICAL SOCIETY.

The following circular has been issued:

Dear Doctor:—The annual meeting of the Inter-County Medical Society will be held at Eau Claire on Tuesday and Wednesday, November 21st and 22nd.

To insure a full attendance, we beg you, dear Doctor, to receive our cordial invitation with favor and make up your mind to come. Not you alone, however, but also the fellow practitioners from your place and neighborhood.

Be sure and invite them, and have them bring their diplomas, so as to be enabled to become members of our flourishing society when here.

We have arranged for a good programme, and can promise you that you will not regret having attended.

Yours fraternally,

D. W. DAY,

President,

J. J. SELBACH,

Secretary and Treasurer,

Eau Claire, Wisconsin.

## NOTES.

### The Value of Proprietary Remedies.

Dr. William Rittenhouse in *The Medical Standard* states: "The fundamental idea underlying proprietaries is that some prescriptions can be better compounded on a large scale by the manufacturing pharmacist than on a small scale by the retail druggists." When physicians hesitate to prescribe Tongaline because it is a proprietary article, they overlook the fact that this is a source of protection both to them and to their patients.

For instance all the salicylic acid used in Tongaline is made in the laboratory of the proprietors from the purest natural oil of wintergreen, and the most eminent medical authorities declare this salicylic acid is the only one which should be taken into the system.

Scarcely any retail druggist has the wintergreen salicylic acid in stock, and those who do have it, purchase it in such small quantities that its cost when dispensed by them renders its use almost prohibitive, hence the synthetic salicylic acid is furnished on prescriptions, and this acid is most unreliable, and its use is apt to be attended with very injurious results.

It is a simple business proposition that a proprietor who has spent hundreds of thousands of dollars in advertising his preparation should exercise the greatest care in maintaining its character by the purchase, regardless of cost, of the very best ingredients which the markets of the whole world will afford, as also that he will use the most improved and expensive machinery and appliances in compounding his product.

When a physician prescribes Tongaline in original packages, or takes care that the genuine article is dispensed, he can always rely upon "certain results from certain doses in a certain time."

### Case of Naso-Pharyngeal Catarrh and Ulceration.

A. B., female, an American, aged 32, came under my care, May 10, 1897. Diagnosis: naso-pharyngeal catarrh with ulceration of the nasal passages, and an ulcer behind the left tonsil of the size of a common bean. The case had received the approved modern treatments, with but partial relief. Early every morning, large accumulations of mucus and hardened scabs would be coughed up. The sense of smell was practically lost; and the hearing was much impaired, the inflammation having extended into the Eustachian canal, producing hypertrophy of the mucus membrane.

After two weeks' trial of the usual treatments as in a former case and with like negative results, the striking success of the blood treatment on that case had become apparent within the last three days, with the evident applicability of the same to the present case. Accordingly, on May 24th, I began the new treatment by first having the patient wash out the passages and gargle the throat with the strong Thiersch solution No. 1, for twenty-four hours. After this, finding the passages as clean as was possible in their diseased condition, I touched up all the points of ulceration with 25 per cent pyrozone, and again ordered Thiersch No. 1 used as before. Next, after the surface of the passages and throat seemed to be in a thorough aseptic condition and ready for the application of bovine, I ordered the patient to wash out the passages with Thiersch No. 1 and spray in bovine and salt water, every three hours. By the 3rd of June, the patient was able to distinguish certain pronounced odors, and the ulcer had decreased fully one-third in size. The treatment described continued, the patient improving daily, without any backset, until discharged, June 26th. The sense of smell was then partially restored; the hearing was almost normal; the ulcerations were entirely healed; and the discharges were checked. The patient is under orders to report for examination weekly and also to continue the spraying with bovine and salt water every night and morning.—*Montreal Medical Journal*, April '99.

### A New Laxative Tablet.

The medical profession, in spite of the great conservatism that characterizes it, is quick to recognize real merit in a new drug or in a new combination of old drugs; and therefore it is quite certain that the profession will accept with favor the new Laxative Tablets compounded by the Antikamnia Chemical Co., as announced in our advertising columns.

A combination of antikamnia, cascarn, aloin, belladonna, and podopyllin is certainly a very happy one. No physician need be told of the therapeutic value of such a combination. Put up

in elegant tablet form, the formula cannot fail to please physicians, and we are certain it will speedily become very popular.

The company also puts up a quinine laxative tablet, by the addition of quinine to the above formula, thus covering quite fully with the two tablets the whole range of conditions calling for a laxative.

**Menorrhagia.**

"I take great pleasure in recommending to my brother physicians Dioivurnia and Neurosine (Dios.) I have used them in menorrhagia, and have been more than gratified with their action.

R

Dioivurnia (Dios)	3 ij
Neurosine (Dios).....	—
Aquae ..	aa 3 j

M. Sig. Tablespoonful in wineglass, one-half full of water every three hours.

This is a valuable prescription for menorrhagia, where the patient is very nervous and weak from loss of blood. I shall continue to use these remedies."

C. O. WILDASON, M. D.,  
Springfield, O.

**Treatment of Malaria.**

Dr. A. G. Servoss, (Medical Council, October, 1899), states that we have two classes of patients who cannot take quinine: First, those who do not like the inconvenience which it causes, such as headache, dizziness and ringing in the ears. Second, those to whom it is rank poison, and to whom under no circumstances should it be given. He refers to a case in which one grain of quinine, given without the patient's knowledge, will bring on complete collapse, with cyanosis, unconsciousness and symptoms of heart failure. Another in which a small dose will bring on all the symptoms of scarlet fever in its malignant form. He states that he could name a large number of cases of erythema and urticaria due to the same cause. In all these cases in which quinine is not well tolerated he is in the habit of giving salicin in ten grain doses, three times a day, and also three grains of quinalgen, three times daily. The secretions should be kept active by the use of vegetable or mineral cholagogues and diuretics.

**Western Surgical and Gynæcological Association.**

The ninth annual meeting of the Western Surgical and Gynæcological Association will be held at Des Moines, Iowa, Dec. 27 and 28, 1899. Surgeons and gynæcologists of the great west are cordially invited to affiliate themselves with this association. The secretary will be glad to send application blanks on request. Titles of papers should be sent to the secretary as soon

as convenient, but not later than November 20 to insure a place on the program.

George H. Simmons, Sec. and Treas.,  
61 Market St., Chicago.

**Minnesota Valley Medical Association.**

The annual meeting of the Minnesota Valley Medical Association will be held at the Saulpaugh Hotel, Mankato, on Tuesday, December 5, 1899. All are cordially invited to attend and to contribute papers, the titles of which should be sent to Dr. G. I. Smart, Blue Earth, or to the secretary of the association, Dr. E. D. Steele, Mankato.

**What's Worth While.**

It is worth while to sustain the patient in a definite way with the least effort on his part; to furnish essential elements of rational tissue building in a readily assimilated hydrocarbon of a type such as Angier's Petroleum Emulsion. The thoughtful physician is ever willing to take suggestions, and when the source of these suggestions is the bedside experience of competent overseers "whose hints show reason and allusions care," the practical importance of a remedy is established, independent of theory.

The trend of professional effort today is to create a soil inimical to the life of bacteria, to kill the bacteria and neutralize their toxins. Resulting from these factors, we have prostration, cachexia and blood poisoning, and it is precisely for such conditions that Angier's Petroleum Emulsion is particularly applicable.

Angier's Petroleum Emulsion not only keeps the patient at par, but it also raises the processes of nutrition to their highest possible point, and in addition is of value especially in pulmonary phthisis, chronic bronchitis or other wasting diseases, as a true blood maker and tissue constructor. From the nature of its composition, it does not interfere with or crowd out other elements of nutrition, but it is cheerfully co-operative and is of distinct value as a Demulcent Expectorant.

Secondarily, Angier's Petroleum Emulsion is a powerful vasomotor stimulant. It seems to exercise a sedative influence in checking the paroxysmal coughing, so frequently associated with earlier stages of phthisis.

The clinical test is the certain test. When Angier's Petroleum Emulsion is used in the class of cases for which it is indicated, it cannot fail to demonstrate its remarkable efficiency as a reliever of cough—a restorer of rest.

According to Loomis, the hypophosphites of lime and soda are serviceable where intestinal digestion is imperfect. Angier's Petroleum Emulsion is nutrition and rest combined. Where it has been prescribed a rapid gain in flesh and strength is invariably noted.

### A Notable Spring Water.

Water to be worthy the recommendation of physicians must meet two tests—that of chemical analysis and that of long use by physicians. Such tests the Indian Medical Spring Water has met. The physicians of Minneapolis, particularly, give it unstinted praise after using it in their own families and in the families of their patients for a good many years. And not only our local chemists, who are perfectly competent to make an analysis of any water, but chemists of wide reputation have made analyses of it; and all unite in pronouncing it a superb table water, and one so nearly pure that it is superior to many of the high-priced waters upon the market, especially in some forms of skin diseases and in the treatment of rheumatism.

It is the only drinking water used at the state university, having been selected after an analysis of all the waters offered in this market.

It is sold at a reasonable price, which can be said of no other water worthy to be compared with it.

The Indian Medical Spring Water Company, 604 Masonic Temple, Minneapolis, will be glad to give any interested person further information.

### An Experience with Ecthol.

Gentlemen:

I had rather a queer experience with your sample of Ecthol. I took it twenty miles north and gave it to Nicholas Diaz. He has had scrofula for four years and has laid out in that time over one thousand dollars. He took a teaspoonful every two hours for four days, after that a teaspoonful every four hours until he had used two bottles. He walked in here today, cured. All signs of swelling and those awful scrofula sores and blotches on his face are gone. Of course, his soft palate was destroyed by the disease long ago, and he thought I could make him a new one. I replied only God can do that. He paid me enough so I can buy more of your remedies, and I shall keep a supply on hand. I buy from Dr. Barry, of Durango, Mexico, who orders for me from San Antonio, Texas.

CHAS. A. BAILEY, M. D.

Canatlan, Durango, Mexico, Sept. 29, '99.

### Treatment of Vaginal Engorgement.

In the treatment of vaginal engorgement from whatever cause, metritis, endometritis, ulceration, vaginitis, and stubborn catarrhal conditions, a most potent adjunct to specific internal measures is Micajah's Medicated Uterine Wafers. They are astringent, alterative, tonic and speedily restorative, and operate in perfect harmony with other indicated measures.

### Render unto Caesar the things which are Caesar's.

It gives me pleasure at all times to render unto Cæsar the things which are Cæsar's. Although I am opposed to giving certificates relative to proprietary medicines, in this case I overlook my objections as I consider Sanmetto one of the greatest vitalizers of the reproductive organs now in use.

P. C. JONES, M. D.,  
Kansas City, Mo.

As the act of nursing has a reflex action on the uterus, I advocate putting the child to the breast, as soon as the mother has rallied sufficiently to make such a course desirable; as soon as possible if there is a tendency to hemorrhage. Generally there is sufficient secretion in the breasts to satisfy the baby for the first day or so, when nothing should be given, but if the child be particularly strenuous or the milk delayed, one part of perfectly fresh or heated—not boiled—milk, to eight of water, with a little sugar of milk is desirable. Sometimes warm water alone will satisfy.

If there is a permanent scarcity of milk I prefer if absolutely pure cow's milk cannot be secured, to use the peptonized, changing it in a few weeks to Mellin's Food. I have found that peptonized milk so relieves digestion, that the stomach in time is so weakened for lack of work, that it is difficult to make it undertake its duties. If the mother has a sufficient quantity the question is comparatively simple and an effort should be made to systematize the feedings to every two hours during the day and three at night, but my experience has been that there are vigorous children who need more food and less frequently and their desires should be respected.

Great care should be exercised in the giving of cathartics to the mother, as a child's whole intestinal tract may be injured by giving her irritating medicines. For that reason I consider castor oil the best, as it is mechanical in its action and leaves little after result. As it is sometimes followed by constipation I do not believe in its use for babies, for I have seen persistent constipation follow its prolonged use.

A number of new styles have been brought out recently, both in single and multiple nebulizers and combinations with air receivers, tables, etc. No physician can afford to be without one of these outfits, as they are of inestimable value in the treatment of diseases of the nose, throat, middle ear, bronchial tubes and lungs.

Full particulars will be furnished on application to The Globe Manufacturing Company, Battle Creek, Mich.

## ORIGINAL ARTICLES.

## THE DIAGNOSTIC VALUE OF UTERINE SCRAPINGS.\*

BY W. D. KELLY, M. D.,

St. Paul.

Curetage is employed first for diagnostic and secondly as a curative means. In the first case it is an exploratory curettement. In the second case a therapeutic measure. In surgical procedures and in mechanical operations of all kinds it is the careful attention to minor details which crown one's work with success.

The methods of investigation of the uterus are so perfect and the knowledge of almost all its affections has made such progress that the surgeon or gynæcologist is rarely embarrassed in making a diagnosis after a thorough examination, yet there are cases in which it is impossible for a physician to arrive at an exact diagnosis, and it is here that the indications for an exploratory curettement find their place. If a patient has an abnormal uterine hemorrhage and we find it impossible to explain the pathogenesis of this condition, a curettement affords the simplest method of arriving at an exact diagnosis. By removing small fragments of tissue and submitting them to a histological examination, we may be able to judge from the microscopic study of the scrapings what the pathological condition is, and if the mucosa be involved, we can practice a total abrasion of the diseased tissue.

Much has been written in the past years on curettement of the uterus, on the operation, technique, on the indications and contra indications of the operation. The value rendered by curettement as a therapeutic method is universally recognized and beyond discussion.

The operative technique presents some variations in the hands of different surgeons. Some difference in detail, but on the whole the methods tend to a common end, to dilate, curette and cauterize the interior of the uterus, whether the dilatation be slow or rapid, performed by laminaria tents, or sponge tents or with dilators. This alone is quite sufficient to alleviate or cure the agonizing pain of dysmenorrhœa due to stenosis, and is of unquestionable efficiency in the treatment of endometritis. After the vagina is thoroughly cleansed the cervix is exposed with the speculum and drawn forward with a vulsellum forceps, if inflammatory conditions of the appendages do not contraindicate. The direction of the uterine canal is determined with a small

sound, a Noble or Ellinger dilator with closed blades is introduced and the cervical canal gradually stretched uniformly by alternately separating and contracting the blades, at the same time carrying the instrument around to a half circle, then back again in the same manner, opening and closing the blades at each step until a larger instrument can be introduced, such as a Godell or Wilson dilator, which in turn after introduction is manipulated in the manner indicated above. By this method tears are very seldom, if ever met with. The method of curetting by Martin, of Berlin, is probably one of the best and is performed by the introduction of a Martin curette directly to the fundus, then carried into the left cornu of the uterus. The finger and thumb on the instrument are held close up to the cervix; the face of the spoon looking backward is firmly pressed, and while held in this position is given a half turn and drawn across the uterus on its anterior surface to the right cornu and the half circle while in this position is again made, then the instrument is drawn with one sweep across the uterus traversing the superior and posterior surfaces, great care being taken not to scrape the curette over the cervix with much force during its withdrawal, preventing, in all probability, a rupture of the cervical artery. Scrapings thus obtained are put upon a flat dish or immediately placed in a jar or bottle of ninety-five per cent alcohol. It is well to place at the bottom of the jar or bottle absorbent cotton or blotting paper, so that the under surface of the specimen will not stick to the bottom and so prevent penetration of the alcohol on this surface.

The different methods used in treating the scrapings are, freehand sections, frozen sections, embedding in celloidin, embedding in paraffine and by boiling. The free hand sections are open to several objections. It requires much practice and time before one is enabled to obtain thin sections by this method, and even then they can hardly be so thin or so even as when cut with a microtome. Frozen sections have the same objections and the finer relations of the cells are much distorted by the rapid shrinking, due to the freezing. In celloidin one can obtain fairly thin sections, but we must be ready to cut when the celloidin is of the right hardness. The paraffine, beyond doubt, gives the thinnest section. The boiling method has similar objections to the freezing and free hand sections. The freezing method is easily employed when one wishes to give a rapid diagnosis. The boiling method is also for rapid diagnosis. Celloidin is preferable for everyday laboratory procedures. The paraffine method is preferable for serial sections and for the practitioner. It has the advantages over

\*Read in the Section of Surgery of the Minnesota State Medical Society, June 22, 1899.

the other methods that it is permanent and sections can be made at any time.

As you are all familiar with the different methods employed, I shall only give the frozen method of Cullen and boiling method of Pick. (a) The first method. After freezing, the section is placed in a five per cent watery solution of formalin for from three to five minutes. (b) Leave in fifty per cent alcohol three minutes. (c) In absolute alcohol one minute. (d) Wash out in water. (e) Stain in hæmatoxylin for two minutes. (f) Decolorize in acid alcohol. (g) Rinse in water. (h) Stain with eosin. (i) Transfer to ninety-five per cent alcohol. (j) Pass through absolute alcohol, then either creosote or oil of cloves and mount in balsam.

The Pick method. (1) Wash loose particles from the mass in water. (2) Boil according to size from six to thirty seconds, then section or freeze and section, put into two per cent formalin solution for two to three minutes. (3) Wash in water half a minute. (4) From three to four minutes in four per cent alum carmine. (5) Wash in water one minute. (6) Alcohol eighty per cent one minute. (7) Absolute alcohol ten seconds. (8) Carbozylol one minute. (9) Mount in balsam.

Given a piece of tumor from the operating room, it is possible to give a definite report in fifteen minutes, as one would be able to give after examining the alcoholic or Muller's fluid specimens at the expiration of two weeks. A modification, at the suggestion of Prof. Welch is highly commended of Cullen's method, which is as follows: A piece of tissue one by five by two cubic cm. is placed in ten per cent aqueous solution of formalin for two hours, rinsed in water. (b) Frozen sections are made. (c) Left in fifty per cent alcohol three minutes. (d) In absolute alcohol one minute. (e) The sections are now run through water and stained in hæmatoxylin for two minutes. (f) Decolorize in acid alcohol. (g) Rinse in water. (h) Stain in eosin. (i) Transfer to ninety-five per cent alcohol. (j) Pass through absolute alcohol, then either through creosote or oil of cloves, and mount in Canada balsam. This method is of a special value in the examination of uterine scraping, the blood being preserved by this method and stains lightly. The specimens are immediately dropped into a ten per cent aqueous solution of formalin. By the time the pathologist receives them, which is at least two hours afterward, they are firm enough to be frozen without difficulty, and permanent sections can be immediately made. This method is recommended for all delicate tissues. In employing these methods one must remember, as for example in epithelioma, that some of the cell nests will drop out, there not being anything to hold them in place, as there is when celloidin is used.

In studying uterine scrapings in their relation to disease, it is necessary that we have a thorough knowledge of the normal tissues and their relation to one another, then again you must bear in mind that we have to deal with tissues, which, at different periods and under different circumstances are normally subject to very great change. We need only compare the uterine mucous membrane of a young child to that of a mature woman at the time of menstruation, or compare the uterine mucosa in the early months of gestation to that in old age. We must be acquainted with the normal membrane at the different physiological periods, and must bear its structure in mind when examining our scrapings. So we see that when we attempt to diagnose disease from the microscopic examination of tissue removed by the curette, we have a complex problem before us. In examining pieces of membrane removed by the curette we often find under the same cover glass the normal and the pathological, side by side. Bearing all this in mind, it is evident we are dealing with a special line of work often requiring an enormous amount of labor. Abroad, every gynæcologist makes his own examination of scrapings. It is conceded by most of the profession that only in exceptional cases could a pathologist diagnose malignant disease from uterine scrapings, before the diagnosis could be made with reasonable certainty by other means. This is not as it should be, as the satisfactory results obtained abroad are due to the fact that there the microscope is in the hands of specialists who make daily use of it. In our special line, we wish to diagnose normal tissues at the different periods of life, abortion, the various forms of endometritis, besides the malignant processes. If we did not know that the so-called decidual cells are not pathognomonic of gestation. If we did not remember that they occur in certain forms of endometritis, in membranous dysmenorrhœa and under other conditions, we should jump at a diagnosis of gestation as soon as we saw decidual cells under the microscope: also in certain stages of endometritis we may find a large infiltration of spindle cells. We should as soon as we saw such a collection of cells make a diagnosis of sarcoma, if we did not bear in mind that normally there is no sharp line of demarcation between the uterine mucous membrane and a muscularis, and that the glands dip down irregularly into the latter. We should, when such a picture presented itself promptly say we had to deal with an adenoma.

Contraindications in endometritis. Never practice curettement when there exists an acute inflammation of the genital apparatus. Curettement has been instituted for chronic processes; acute or sub-acute inflammation of the uterus, recent lesions of the periuterine tissues, phlegmon of the ligaments, pelvic peritonitis and hæmatocele



are among the formal contraindications to the operation. The exception to the rule against operating during actually acute inflammation is septic puerperal endometritis, with or without organized debris. Here the dominant indication is the removal of the putrid material. During the operation one must scrupulously maintain the most absolute asepsis.

Post operative antiseptics. The curettement must be complete, for if any infected tissue is left within the uterus, it will, in a short time, reinfect the denuded uterine surface. Bouilly advises not to withdraw the curette until the scraping has been finished, as he says each time you withdraw the instrument the cervix contracts, rendering its reintroduction more difficult, and liable to infection. The curettement is considered complete, when, after having scraped all of the internal surface of the uterus, the curette removes no debris. The individual operator defends by reason and experience his own method of accomplishing the above results. Without admitting that all has been said on the technique of curetting, it is at least unnecessary to add much to these methods or to the different procedures. In a general way, it is perhaps better, on the subject of curettement, not to be exclusive, but to have recourse to different procedures in different cases. The conditions may vary with the case, depending upon the conditions of the uterus necessitating the scraping. If the results accomplished by curettement be well known, if the operative technique be determined, there is still a point in the study of this operation which has been, and which is still the object of discussion, and that is the consideration of the indications and the contraindications of this operation.

We will not consider the past history of curettement, which in the short interval since its birth has only been directed against uterine granulations and carcinoma. We all know the failures of this method, even in the hands of its originator, Recamier, and the surgeons who employed it in preantiseptic days. Once more curettement has taken its place in current practice. It is of service daily, and the failures which may be attributed seem to be due, solely, to a faulty antiseptics, or an abuse of this method of treatment. One of the clearest indications, which is generally admitted, is found in the treatment of the so-called internal metritis or endometritis. When the mucous membrane of the body of the uterus is diseased, in this condition, the morbid tissue must be removed, and it is favorably modified by regeneration. As Pozzi expresses it "curette modification". Ruge, to whom belongs the credit of having first placed the subject of endometritis on a scientific basis, speaks of, (1) endometritis glandularis (hypertrophic); (2) endometritis interstitialis (atrophic); (3) endometritis glandularis interstitialis, being a combination of one and two.

Veit now looks upon the combined form (3) as an interstitial inflammation developing on a preëxisting endometritis glandularis. The glandular inflammation he looks upon as a hyperplasia of the mucous membrane, and the etiology he looks for in irritations which affect the endometrium indirectly. The cause of interstitial endometritis Veit attributes to infection. He explains the combined form thus: An endometrium which is the seat of glandular inflammatory processes becomes through bacterial infection also the seat of an interstitial inflammation. What we find in the first stages of chronic endometritis is an increase in the size of the glands. Later, there is added to this an increase in their number. They branch out, laterally, and on section often appear of cork-screw shape. If this glandular hypertrophy and this development of new glands are carried to an extreme, we may find the whole mucous membrane consisting almost entirely of functioning glands, with very little interstitial tissue. Besides increase in hypertrophy of the uterine glands there is a hypertrophy of the glandular epithelium. The cells are increased in size and number, and instead of a single layer lining the glands, we often see two, three or even four layers, besides hemorrhages into the glands and interstitial tissues. Here Prof. Welch's modification enables us to distinguish in our section each individual blood cell. In the interior of the glands we often find mucus. In some cases the lumen of the glands is cystically dilated and no longer appears circular on cross section. The changes in the blood vessels as found by Van Tussenbroek and De Leon are almost constant swelling of the endothelial cells of the capillaries, also dilatation of the veins and small arteries with thickened walls. The common neoplasms of the uterus, such as fibroma and cancer, are today effectually treated by surgical methods, but still there are cases among the fibromata, as for example, where the significance of the tumor per se is disproportionate to the grave symptomatic accidents that may accompany them, such, for instance, as hemorrhage. In such cases you will recognize the origin of these hemorrhages to be in the mucosa of the uterus; it is well to remove the mucosa to relieve the hemorrhage.

In cancer of the uterus there is in the evolution of the disease, a period in which a radical cure by surgical treatment seems to be possible; the curette has been employed to combat the rapid proliferation of the bleeding and fœtid granulations. The diagnosis of this condition can readily be made in its earliest stages by an examination of the scrapings. There is no condition in which the value of the microscopic examination of the uterine scrapings is so clearly apparent as in cancer of the uterus. The report of the microscopic examination often determines whether or not the patient shall be subjected to

the operation of hysterectomy or not. The decisive point in the microscopic examination in cancer in the body of the uterus is the recognition of the down growth of the epithelium. This growth is characterized by the formation of alveolar spaces filled with epithelial cells, so-called islands. More frequently, however, this growth is in the form of tubular glands, which resemble the utricular glands. This type in contradistinction to epithelioma is known as malignant adenoma. The most important sign is the invasion into the muscle of the uterus and the recognition of typical cancer cells.

As regards the mode of propagation of cancer of the uterus, M.M. Ferriar and Quenn support the theory claiming the mucosa of the uterus and ovaries to be tributary to each other. The researches of Porier explain the conveyance differently, by explaining or demonstrating that the lymphatics of the uterus reach in leaving this organ special ganglions, without passing through the tubes or ovaries, thus not permitting propagation by the mucosa. The dominant fact of all these discussions is that today the uterus is universally considered as the center, the focus or origin of periuterine diseases; hence the birth of curettage in treatment of periuterine affection; but examining it closer, the question of periuterine affection or infection is not so simple as you might be led to believe, the symptoms complex, the diagnosis difficult and the indications vary. Mundé, in his work, published in 1883, reported a case where he curetted for salpingitis, but this remained unobserved, and the operation was not revived until later. Walton, in 1887, became the true propagator of this method of treatment. According to him, pelvic peritonitis is an inflammation of the pelvic peritoneum and the organs contained in it. Metritis is followed by a salpingitis, the salpingitis by pelvic peritonitis. Curetting the uterus, that is removing the cause, relieves the metritis and the salpingitis, and in quelling it causes the disappearance of the perisalpingitis and pelvic peritonitis. An important distinction, according to Walton, is to determine whether the case be a pelvic cellulitis or a pelvic peritonitis. The latter is usually a consequence of salpingitis. If the pus is in the tube, the dilatation of the uterus may permit evacuation, and consequent recovery. Curetting acts on the uterus, and hinders the production of the salpingitis; nevertheless, the distinction between the cellulitis and peritonitis is important to make, because we might expect the dilatation of the uterus to be of greater service in an abscess of the tube than in cellular abscess. Walton concludes that the inflammation of the uterine tubes is always of microbic origin, and to destroy the uterine mucosa in which the microbes are embedded, it is necessary to curette. The same author adds that it is illogical to attack directly the peritoneum and the inflamed adnexa. It is more logical to attack the cause

which engenders the disease, that is to say, the endometritis. It is probable that the causes removed, the effects will disappear. M.M. Segond and Terrier have obtained amelioration and sometimes disappearance of pain and tumefaction when they have curetted the uterus, and not only with endometritis, but even with the beginning salpingitis, but they have not obtained any results in cases where the salpingitis was appreciable or well confirmed. M. Bouilly says that curettement in periuterine affections has given him results only where there was a mild degree of salpingitis. However, if the tubal tumors are voluminous and the exudate mucopurulent or purulent, it is evident that it would be of no avail. To lay down the indications and contraindications of a therapeutic method, it is indispensable to accurately diagnose the affections against which it is directed. In the second place, it is necessary that effects produced by the treatment be verified a long enough time after the operation. That which strikes one above all, in the study of cases pertaining to this subject is the variety of forms of lesions of the adnexa, which can be placed side by side for comparison. Only to scan the titles of the memoirs bearing on this subject, we see how little precision is given this problem. In curetting the uterus in pelvic peritonitis, in salpingitis, in periuterine lymphangitis, it is not doubtful that if one understands the pelvic peritonitis, the conditions as reported by Walton can give but good results. The observations of M.M. Routier, Terrillon, Reclot, Segond and Pozzi show numerous failures in cases where they have practised curettage for metritis complicated with tubal ovarian lesions; many of these patients have been obliged to undergo secondary ablation of the adnexa. It is evident that the true cause of failure of curettage is most often due to the pressure of pelvic complications.

M. Pozzi says that if the metritis is accompanied by salpingitis, it is necessary to determine the variety of the latter. According to him, curettage only succeeds with acute catarrhal salpingitis; moreover it is dangerous if the affection be suppurative. In brief, all surgeons respect curettage in the treatment of periuterine affections.

M.M. Terrier and Pozzi have recourse to this treatment for cases of salpingitis. M. Picque reports some observations of curettage for catarrhal salpingitis, followed by successful results. In cases of perisalpingitis, he has also noted that the curettage has had a notable palliative effect.

We should note the modification of the technique of curettage in periuterine affections. One should not drag down the uterus to the vulva. It would be dangerous to try to move these parts, on account of rupture that might be produced during the manœuvre. It is certain that to practise curettage without lowering the uterus, greatly augments the operative difficulties, and this

should be taken into account in an appreciation of the procedure.

Among the circumscribed periuterine inflammations, curettage of the uterus has rendered apparent service in cases of the interstitial form, where one has obtained some amelioration. The curettage has had a good effect in some observations of hydrosalpinx, even in cases of pyosalpinx where there was only a mild degree of periuterine inflammation that Pozzi has called serous perimetrosalpingitis.

M. Doleris published in December, 1887, a work in which he said he had employed curettement in the treatment of fibromata, and that this procedure had an excellent effect in arresting uterine hemorrhages, but the results were only transient. Pozzi recommends this palliative treatment in case of medium sized tumors, occurring in women approaching the menopause, where it is desirable to temporize. The checking of the hemorrhage is brought by removing the diseased mucosa and by combating the congestion. Walton advises curetting whenever the removal of the fibroma presents great difficulty or danger. In such cases he recommends curettage and dilatation, which are, he says, "inoffensive operations and often so useful that the conscientious physician should propose them before attempting a serious operation."

Schroeder, Mundé and Hegar have had success with curettement of the uterus with this method.

One of the most frequent accidents in curetting is hemorrhage, but still, repeating Pozzi, this hemorrhage should not frighten the operator, because it diminishes as he proceeds with the operation. The object of curetting is to modify the morbid mucosa, or destroy it, then to have it renewed is the principle of this operation, as this mucosa is the culture field of pathogenic organisms. Schroeder, Lawson Tait, Polk and Cornell believe in the propagation of inflammation by continuity of the mucosa, and the extension of this inflammation is very often the common cause of pelvic peritonitis, and it is from this that all accidents that one may observe as complications of endometritis follow.

Then, in cases of salpingitis, with the exception of the urgent cases which do not admit of delay, we might attempt the treatment of the endometritis. In pelvic peritonitis it is justifiable to curette the uterus. Martin, of Berlin, advances the opinion that he would not have recourse to laparotomy in cases of salpingitis until he had tried all other methods of treatment.

So far as the curettage itself is concerned, nothing in particular can be said, save that it should be performed thoroughly, aseptically, if possible, in order to be efficacious. One should

not be content to scratch the mucosa. The mucosa should be removed.

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#### FIFTY CASES OF MEMBRANOUS CROUP, TREATED BY THE SAME METHOD WITH 38 RECOVERIES AND 12 DEATHS. OF THE FATAL CASES TWO WERE INSTRUMENTAL.\*

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It may possibly be said, and with justice, to be a foolish thing of me to bring before this learned Society such a threadbare subject as a general treatment of membranous croup, or if you please "acute laryngeal diphtheria", used in fifty consecutive cases, especially in this age of anti-toxine and serum treatment. But I have given this therapy my faith and my studies for the last fourteen years, which time it has taken me to collect the material for this report, and even with all the success claimed, with trumpet blares, by the enthusiastic supporters of the serum therapy, it may still be of use to hundreds who either cannot get the fresh and proper supply of serum at the time when it is most needed, or else feel themselves a little doubtful or not quite so enthusiastic about said therapy as some of their neighbors, but still feel in duty bound to use this therapy; and who if they had something that would offer as much or more advantage and as much freedom from censure as the serum would prefer to employ it.

I think I have reason to claim that the treatment pursued by me for the last fourteen years, in this most dreadful of all diseases attacking childhood, is such that it will promise just as much, if not more, than any other treatment pursued in that time and in as many cases. I have waited patiently, year after year, to get the full quota of cases, to report my results to this or some other

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fully as well qualified body of men. I have waited to report until I could get enough data to build my claim upon, so that I could point to enough cases to at least demand for my words that respectful hearing which every advance in the treatment of any disease has the right to ask for; and, when it is an advance in the treatment of that most disastrous disease "acute laryngeal diphtheria", it has a double right to make the demand. Members, I beg you to take into consideration that I come before you with a treatment carried on by me since 1885, and faithfully adhered to during all these years in one and every case of true croup that I have seen, with what results my statistics will show better than any words spoken loosely beforehand.

In this series of fifty cases of membranous croup, none but true cases are included; of the series thirteen cases were instrumental, with three recoveries; the balance, thirty-seven cases, were treated exclusively by the method I advocate, and with thirty-five recoveries, or in all fifty cases with thirty-eight recoveries, a percentage of recoveries greater I have reason to believe, than can be claimed for any other treatment with which I am acquainted.

I will no longer dwell upon the fore part of my essay. I will now come from "sounds to facts." It is not my purpose to get into any discussion upon the merits of the unicity or duality of membranous croup and diphtheria. I think this something of the passed age. Few, if any of the living generation of physicians practising today will dispute the unity of these diseases, and still I plainly remember when no later than in the early eighties the battle raged hot between the two factions; when learned men on both sides tried their best wit and sharpened their intellects to prove one thing or another. And still, gentlemen, I am positive we may have a true membranous croup that is not diphtheritic. I have myself seen two such cases but it is of such a rarity, that you can safely state that ninety-nine cases out of one hundred are diphtheritic in origin, and therefore you may safely call yourself a unicity.

Now, if you will permit me, I will tell you how I first came to use this treatment. On New Year's eve, the 31st of December, 1885, I then practised in the city of Stillwater; was called late in the evening, to see a little boy about two years old, who had for some time been sick with hoarseness, cough and a mild sore throat. Diphtheria was then prevalent if not epidemic in the city. I naturally therefore suspected this to be a case. On my arrival at the little sufferer's bedside I found him in a very pitiable condition, in fact such a case as we so often meet and the description of which always falls short of the reality, and where the only thing that comes to your mind is tracheotomy. I had the hopelessness of

the case staring me in the face; I had also the hopelessness of any treatment grinning and demoniacally smiling at my discomfiture. I had some hypodermic tablets of apomorphine in my pocket-case; my first idea was to use it hypodermically, producing emesis and thereby mechanically relieve the little martyr from his sufferings, but on second thought I changed my plan and gave the following prescription: Apomorphinæ hydrochloratis, one-fifth grain; calomel, twenty grains; sodæ bicarbonatis, thirty grains. Make twenty powders and give one every hour, dry upon the tongue. The thought came to me as an inspiration to combine the apomorphine, calomel and soda bicarbonate, and to give them in hourly doses. I also prescribed inhalations of turpentine, eucalyptol, carbolic acid, and cologne water, equal parts to be poured into hot water letting the patient inhale the aromatic vapors covering him in such a manner with a sheet or thin blanket, that the whole formed a kind of canopy over him.

On my way home I thought much upon the treatment of croup, the thoughts following me as companions to my bed; the more I thought the more I became convinced that the reason why Jussieu, Hartmann and others who had recommended apomorphine in the treatment of croup, had had so little success in their endeavors, was on account of their large dosage, given at one time to the patient, and therefore the great depressant effect upon the previously weakened system, and the impossibility of withstanding the violent emesis following the employment of the drug, the total effect being such that it became rather harmful than beneficial. But now, if it was given in smaller doses, and together with calomel and bicarbonate of soda, the effect would unquestionably be another, i. e., an expectorant, digestive and antigermicidal. The more I thought the more convinced I became that my reasoning was logical and correct upon the premises I had before me, and although my first prescribing was somewhat of an accident or partook partly of such a character, I found after mature deliberation that I was near a very important solution of a treatment of this formidable disease. On the next morning, when visiting my little patient, I found that during the night about three o'clock, he had puked or heaved up a whole lot of slime and membranous material, and that now he breathed with ease and felt much better. I dared not believe my eyes or my ears, but a change for the better had taken place; I kept up the same treatment, only changing the powders to two hourly; on the next day I prescribed a mixture containing pilocarpine, codeine, hydrochloric acid and syrup of tolu, in proportionate dosage, to be given every three hours. The inhalations to be kept up the same as before. After this time I had no trouble with my patient, he quickly recovered, and on the third day I left off with the

powders, only giving the cough mixture as needed and giving him iron, quinine and strychnine as a tonic, taking all other necessary precautions as in an ordinary case of diphtheria.

In January of 1886 I saw my second case in this series, I saw it early and started early with my treatment; I therefore had no trouble and recovery was prompt. I might have been doubtful of its verity if it had not been for other positive evidences. It would probably have recovered with any good common sense treatment. My third case I had in December of the same year; it was a case of a boy three years old, who often suffered from spurious croup therefore I at first gave very little attention to his increasing dyspnoea, until at last it assumed such alarming proportions that for three days and nights I kept myself ready to perform tracheotomy if there should be the slightest increase of suffocation. In this instance the child was the son of my most intimate friend and I did the most of the nursing myself. After the third day all the danger was over and the little sufferer well on the way to recovery. All the other members of the family were, either before or after the boy's recovery, attacked with a suspicious form of angina, an angina which I think would under the microscope have been found to be due to an implantation of the Klebs-Löffler bacillus.

I have reported these three cases together with some remarks on the use of apomorphine, calomel and bicarbonate of soda in the treatment of diseases of the respiratory organs, at a meeting in Eau Claire held by the Inter-County, now Inter-State, Medical Society, of Wisconsin.

During the years of '87-'88 I had only a few cases of true croup; all were treated by the same method and all recovered. My further experience with apomorphine and calomel, and also some observations upon sodio-salicylate of caffeine, were communicated to this learned body of practitioners at its meeting in Duluth in the year 1888, I think, and the article upon it was embodied in the annual report of that year.

In the year 1889 I removed my field of practice to St. Paul, and, as the winter season of that year brought with it an epidemic of diphtheria, especially in that part known as Arlington Hills where I at the time resided, I thus had great opportunities to test the value of my treatment. My whole number of cases of diphtheria amounted to eighty-three, of which twenty-seven were "laryngeal" in character; of these twenty-five recovered; the two fatal cases were one tracheotomy and one intubation. In 1890-91 I saw ten cases of membranous croup, all of a very severe type; some were seen in consultation, and in these my treatment did not have a fair chance because it was instituted too late; in six cases intubation was done, and all of these ended

fatally; in two tracheotomy was done, with one recovery, a child two years old.

In 1891-92 I saw cases 37-41, all very severe; in one intubation was done at 7 p. m. and tracheotomy at 1:30 p. m., under protest from me; the child was about four years old and died soon after. In 1892-93 I saw cases 42-46; in one intubation was done and the child recovered, the only one out of eleven cases of intubation. In 1894 I saw case 47, recovery. In 1897 I saw cases 48 and 49, both recoveries. My last case I saw this year in March, also a recovery.

My cases have ranged in age from nine months, my youngest, to nine years, my oldest.

I will recapitulate that my cases have extended over a period of fourteen years; that all and every one of them has been a true membranous croup; that no spurious or spasmodic croups have been included in this report; that although in some such cases this line of treatment has been used, under no circumstances have they been reckoned in this report. That always strong proofs of the genuineness of the croup must have presented themselves before the case has been listed amongst this record of cases, such proofs as that cases of croup or diphtheria must have been found in either the members of the same family, or among the playmates of the child, or in the close neighborhood. I will finally pick out a few cases at random to show the desperate character of my cases.

Case III. Boy, age 2 years, strong, robust, had when a baby suffered from a severe form of eczema infantum of a general type, but was now in perfect health except that he suffered from spasmodic croup at the least exposure; as this was easily helped by the application of a "neph-tune compress" covering part of the neck and chest, no uneasiness was felt when he began with croupy symptoms, nor until they became very persistent and unyielding in character, the dyspnoea all the time growing more and more alarming. Several members of the family were complaining more or less of a sore throat. This, together with the persistency, made me suspicious, and I realized about nine o'clock p. m. what I had to deal with. I began at once my treatment by prescribing apomorphinæ hydrochloratis, grain 1-40; hydrargyri chloridi mitis, grain 1; sodii bicarbonatis, grain 2. To be given hourly, dry on the tongue. I also began at once with inhalations of equal parts of turpentine, eucalyptol, carbolic acid and cologne; this inhalation was done by putting a kettle of boiling water over a kerosene stove, setting the stove alongside the bed or near the nurse's chair, covering the whole with a sheet or blanket held above like a canopy. That night his struggles for breath were fearful and frantic; about three o'clock in the morning he puked or heaved up considerable mucus and stringy matter, after

which he went to sleep and rested fairly well for two or three hours; the medicine was steadily kept up and he vomited stringy matter several times during the next twenty-four hours; the next night the suffocating attacks came on again but were not quite as severe; the treatment was kept up the next day, except that the powders were changed from one to two hourly; the next day, the third, the suffocation was much lessened and

I prescribed the following mixture:

R	Apomorphinæ hydrochloratis,	gr. j.
	Pilocarpini,	gr. j.
	Tinct. hyoscyami	ʒ j.
	Acidi hydrochlor. dil.	ʒ j ss.
	Tinct. nuc. vomic	gtt. xxx
	Syr. tolutani ad	oz. iv.

One teaspoonful in water every three hours. Inhalations to be used with the medicine, diet as usual under such circumstances, spirits and wine to be used as needed for stimulation. After the third day all danger was passed and the after treatment was the same as after diphtheria.

Case XIII. Infant, 9 months old. When first called, I found the child cyanosed clammy and suffocating; he had been sick twenty-four hours with increasing symptoms. I began at once my treatment with apomorphia and calomel, also inhalations, but, also, on account of the great dyspnoea and depression, alternated the same with a mixture of musk, camphor and carbonate of ammonia, one grain of each in the form of a linctus, such a dose to be given every hour alternating with the powders. About 8 a. m. I saw the patient for the first time; about 11 p. m. of that day she threw up membrane, a perfect cast of the right bronchus with some of its finer ramifications. I still possess this specimen among my pathological collections. From this time on I had a good recovery, and in two days more my patient was well.

Case XXI. Girl, 7 years old, strong and robust, had been sick about three days. On the evening of the day I was first called, I performed tracheotomy, and left the child breathing easier, but soon was called in a hurry, because the child had in some way torn the tube out of its place and had struggled very hard, but was now in a deeply cyanosed condition. Before I could succeed in reintroducing the canula she had breathed her last. It seems that the canula had filled up below its bronchial opening. This was one of my earliest tracheotomies, and probably my technique was not all that could be desired. The tube was out over thirty minutes before it was reintroduced.

Case XXII. A girl, 5 years old, lived just across the street from, and was a playmate of the

previous case; this case I saw early and the treatment was early begun, and as a result I had a prompt recovery from all the dangerous symptoms.

Case XXIII. A brother of case XXI. This case also I saw in the beginning and had a very prompt recovery.

Cases XXVIII and XXIX, brother and sister, respectively one and four years old. The little boy was sick first and I saw him on the second day; began treatment at once; at the same time, noticing a peculiar cough in the little girl, I examined her throat and found some diphtheritic spots on the tonsils. I at once started him on my treatment. The little girl did not get along well, was hard to get to take the powders, and still harder to keep under the tent. On the third day after commencing treatment I intubated, but unfortunately the tube was vomited up, or coughed up, and the parents would not permit me to introduce it again. The next day I proposed to make a tracheotomy, but the parents would not permit it to be done; the child died on the eighth day after the onset, more from exhaustion than from strangulation. Her brother made an uneventful recovery.

Cases XXX and XXXI, brother and sister, two and five years, both severely sick; one little child, one year old, had died before I was called to see the little sufferers. They had been sick three and four days respectively. Began treatment at once, inhalations and stimulants pushed to the utmost. The next day both children had thrown up tubelike, membranous casts. On the following day I gave a tonic containing hydr. chlor. corr., ferrum, strychnine, hydrochloric acid and spir. vini. gall. Both made excellent recoveries.

Case XXXIV. Boy, seven years old. Saw this case in consultation, prepared either to make intubation or tracheotomy as most suitable for the case. Proposed to the consultant, Doctor W., to try my plan during the night, and if not better in the morning make a tracheotomy, I did not think the risk of waiting would be greater than the advantage gained in converting it into a non-surgical case. Towards morning the boy had thrown up a lot of membrane and dropped into a refreshing sleep. When we again saw him in the morning we concluded that the best plan to pursue was to leave well enough alone. In a few days more he was out and well.

Case XXXVIII. A girl, nearly 9. Saw this patient quite early and started early with the treatment. It was a severe case and I kept myself prepared all the time for instrumental interference, but on the fourth day visiting the patient late, I concluded there was no danger leaving her over night. During the night the girl vom-

ited up quite a lot of stringy, mucoid material. Her parents becoming alarmed, although I had told what might happen, through the influence of some meddling woman, sent for a charlatan Dr. R. who at once, to make himself great, telephoned for a doctor now dead, who at that time had quite a reputation as an intubator, and being somewhat of the charlatan type himself was immediately ready to fall in with Dr. R.'s proposition to introduce a tube into the girl's throat and perform "the operation", as he at that time styled the process of intubation. As luck would have it I happened to make my morning call just as he was ready, with a great deal of theatrical flourish, to perform this, to most surgeons easy operation, which to him, according to his own words, was a wonderful work of surgical skill. He told me, presumably not knowing that it was my case he was meddling with, that he was going to do this, the only operation for the relief and cure of croup, with a great deal of bluster and bravado on his side. I simply asked the father of the girl to give me my set of intubation tubes and my tracheotomy case, as I had concluded last night when visiting her, that any surgical interference was unnecessary, as the patient was then out of danger, and that I was still more of that opinion this morning, but if Drs. R. and X. liked to obtain some rather questionable fame I would not stay to glorify their unnecessary operation. I understand intubation was performed and Dr. X. had the pleasure of saving one more case by "the operation," only this patient was already saved, and not by the great and only cure for membranous croup, intubation, either. But how evanescent is human greatness; now we have a still greater cure in Behring's patent serum.

Cases XXXXVI and XXXXVII, my own two boys, respectively at the time, three and six and one-half years old. The history of contagion is the only remarkable thing about these cases. On one Saturday in July, 1897, I found my hired girl complaining about sore throat, palate. She was at once isolated and energetical and on investigation I found a well developed diphtheria patch on the left tonsil and some smaller patches on the right and also on the soft ly treated and on the following Monday her throat was clear and she felt all right. That same afternoon about 4 p. m., the eldest boy complained about malaise and during the night had croupous cough. The next morning the youngest had the same symptoms. I at once started with apomorphine and calomel treatment, in conjunction with inhalations, the youngest became quite sick and I held myself ready to perform tracheotomy if necessary. Towards two o'clock Wednesday morning he puked up a great deal of membrane and mucus and then he went to

sleep. Both felt very well the next day and were soon out of danger.

Case L. This, the last case of my series, I was called to see about 8 o'clock p. m. on the first day of March this year. He was a bright boy of three years. My first impression was that the case was beyond help. I thought of intubation, but no, my experience with this surgical procedure is that the most of the cases that are reported as cured or benefited by it, are such cases as would get well without it or in spite of it. I thought of tracheotomy, but would the child stand that formidable operation? No, hardly. The case had already lasted three days. Still I had now so much confidence in my plan of treatment, that I would risk it and it alone; I never thought of the serum treatment, as I was morally certain my treatment would accomplish as much and be fully as efficacious as any other plan, no matter what name it bore, patented or not. My faith stood by me and on the third day my little chap was fully out of danger and two days thereafter I discontinued my visits.

I have here taken cases at random only to show what my results have been. Fifty cases with thirty-eight recoveries is such a series that I can at least command attention for my method. I make no claim for originality in this list of remedies. Several authorities before me have been recommending apomorphine. Calomel in large and small dosage, in heroic doses and in homeopathic centesimals, has been upheld by all authorities, in one form or another as nearly a specific for croup. The alkalis in different chemical combinations, have been lauded highly. The chlorides, the sulphites, the benzoates and salicylates, the sulphocarbolates and hyposulphites have been praised by many and great authorities. I have therefore done nothing new in the field of therapy. All I claim is that my combination of apomorphine, calomel and bicarbonate of soda is superior to any other formula ever before introduced for the medicinal treatment of croup; that in this formula we possess therapeutic agents that will meet all the requirements, physiologically and therapeutically of a case of membranous croup. It will act as an expectorant, as an emetic by its accumulative action, as an antiseptic, as an alternative, as a digestant, and will render the saliva alkaline so that the Klebs-Löffler bacillus will not find a suitable culture medium. And right here let me impress upon you that the powders must be given dry on the tongue and that very little water must be given the first ten to twenty minutes after the powders are given. In the inhalation we have the desired antiseptic or rather antigermicide to stop the growth of the spores of the bacillus, and the inhalation must be no play, no, the whole room must be permeated with the vapors of this remedy. Another thing. All the ingredients are necessary and must not

be tampered with or improved upon; you may think that alcohol may do as well as eologne, but this is not so; I have found that only a fine quality, such as is prepared by one of the genuine Farina formulas will do. It must be refreshing and not sickening in the sickroom; it must not be made by diluting cheap extracts and perfumes of chemical origin; it must be made of pure, good, essential oils, and aged.

It may be seen that I am making rather strong claims for my plan of treatment, but I have tried it again and again, with such surprisingly good results, that if my children should again be unfortunately afflicted with this horror, I would risk my plan rather than even the now so loudly praised anti-toxine treatment. Not that I am opposed to this; my senses tell me that it must be good, or else so many acute observers could not observe it, or use it, it must therefore have proven to be what it was promised to be.

In conclusion I will say that in all this my many years of work I have faithfully held to my idea conceived in 1885, that the reason why apomorphine had not accomplished greater results in the treatment of acute laryngeal diphtheria was the too large dose given, that it had been given as an emetic when it ought to have been given as an expectorant, with a gradually accumulated emetic effect. The calomel acts as an alterative and germicide; the bicarbonate of soda has a two-fold action, first in helping digest and disintegrate the membrane and loosening it from its attachment, and second making the saliva over alkaline, and thereby hindering the spore formation. This with the over moistened and superladed germicidal atmosphere surrounding the patient hinders the spasms and lessens the coughing spells, saving the patient's strength until the act of puking or heaving up frees the little sufferer from the new formed membrane which has threatened his life.

I now leave this my contribution to the treatment of membranous croup in the hands of the learned critics of this Society, and hope that I shall elicit enough criticism and interest in this ever new subject, to repay me for the investigation I have undertaken into this ever old and new field of medical lore with its many and variegated therapeutical legends and sagas.

### INFANTILE DIARRHŒAS.

By D. EDMUND SMITH, A. M., M. D.

Minneapolis.

The apparent diversity of opinion regarding the most common of infantile disorders shows that a clear, concise knowledge of infantile diarrhœa is not attained.

The consensus of opinion divides this disease into three classes, observers basing their differ-

ences upon clinical, etiological, climatic and pathological conditions.

However, it is generally agreed that one class is the sequel of the milder form, either of slight or long duration.

The first, most frequent condition is caused by error in quality, quantity and method of preparation of food.

The breast-fed population, irregularly and indefinitely fed where little or no attention is paid to the cleanliness or health of the mother present the smallest and least troublesome class, for breast-fed children number, according to Holt, but three per cent. of patients. Artificial foods and prepared milk are accountable for the remaining ninety-seven per cent.

The first class of patients are recognized clinically by illness of short duration, indigestion, frequent, large, foul smelling stools of eurdled, lumpy, undigested food, accompanied by acute pains and cramps. The stools are acid in reaction, attended with marked flatulency, vomiting and restlessness.

The undigested food acts as a foreign body in the intestine, causing increased peristalsis and increased secretory activity. This condition is often self-limited, but is easily handled by a single grain dose of the mild chloride or a purgative dose of castor oil.

This condition, however slight, is a forerunner of the two more dangerous classes where the death rate reaches its highest percentage.

The transitional cases are numerous, but marked conditions must be taken as typical. This class compose those who are unable to throw off the irritating, undigested mass, to absorb the products of fermentation and the toxins bred by the ubiquitous germs, which find a convenient soil for multiplication.

Two conditions result: toxæmia and increased peristalsis. The local irritation of toxins or their germs produces such marked secretion that the stools are frequent and serous. This excessive drain upon the tissues is attended by rapid emaciation, while the anxious, pinched face, sallow and wrinkled skin soon appear. These evidences of toxicity demand immediate attention. At this stage the previously acid discharges become alkaline, less odoriferous, less in consistency, less in quantity but more frequent and serous. The irritation of the alkaline fluid causes an almost constant tenesmus, besides forming an ideal culture medium for the bacillus coli communis.

Great difficulty is experienced in checking the serous discharge when the abnormal glandular activity is once established. Although each case presents its peculiarities, the most rational treatment seems to have the greatest number of



followers. First cut off the source of germ growth, the food. When the child is too weak to go without nourishment twenty-four hours or more, its strength may be maintained by liquid beef peptonoids, somatose, rice, barley or toast water or any easily absorbable meat juices.

At the same time copious draughts of sterilized, warm or cool water must be forced down the patient. Wyeth's beef juice in five minim doses at frequent intervals is often retained.

Excessive vomiting demands lavage by means of a soft catheter, or in case the patient is too weak to stand the exertion attendant upon lavage, a dose of one-fifth of a minim of carbolic acid, thoroughly mixed with a drachm of water, is often beneficial.

High enemata of boric acid solution, one drachm to the pint, may be given through a catheter, to the quantity of three quarts, from a fountain syringe held thirty inches above the rectum of the patient. But where the serous discharge is copious, this above treatment is inadequate. Unless this discharge is stopped death will ensue. Some astringent which should be antiseptic and slowly absorbable is demanded.

The exhaustion following the administration of such a drug, because of the struggles of the child, often is more harmful than is the medicine beneficial, for the taste and quantity are such that the child often ejects the dose and we are uncertain of the amount retained.

Tannic acid is the drug, par excellence, but it has been dismissed by the profession because of its unpalatability, its bulk, its taste, its rapid absorption in the upper intestinal tract and its rapid decomposition.

However, recently a chemical combination of eighty-seven per cent. tannic acid and urotropine has been formed, which is an ideal medicine in these cases. Tannopine is given in small doses, from three to ten grains every three hours. It does not break up until it comes into contact with the alkaline medium of the lower intestine, when tannic acid is freed and the urotropine liberates the most desirable of antiseptics, formalin. Children take it readily as it is tasteless and small in bulk; it may be given either on the tongue or in any kind of nourishment.

The formalin destroys the germs already attenuated by previous treatment. As soon as the serous discharge is stopped there is an immediate improvement in the patient's condition.

The reason so many prepared foods are beneficial at this stage is their great dilution. In the gradual return to milk diet the same rule should be observed. The cream or milk should be very largely diluted and given in small doses at short intervals, rather than in large quantities at long intervals.

The third class, evidently a step farther along in the progress of the disease, consists of those

where the irritant and the toxins have been powerful enough to erode spots in the mucous membrane, and through these ulcerated surfaces pyogenic germs find an entrance. Here we are confronted not only with a toxæmia, but a septicæmia and necrosis as well. At times the mucous membrane for several inches will be sloughed off as a perfect cast of the intestine. When recovery occurs, stenosis from cicatricial contraction, lack of absorption because of destroyed glands, constipation and intestinal obstruction will result.

The treatment, beside lavage, must be more supportive and the power of resistance increased, in order to throw off the absorbed poisons. There is greater restlessness and nausea which may require minute doses of opium. The serous discharges are more copious, but mixed with blood. Tannopine in larger and more frequent doses should be used, while the flagging heart needs strychnine, even caffeine and atropine.

It is the third class which often partially recover and leave a chronic diarrhœa, thus opening an avenue for tuberculosis and other diseases.

#### FRACTURES IN AND ABOUT THE ELBOW JOINT.\*

BY R. C. DUGAN, M. D.,

Eyota, Minn.

The recent great widening of the surgical field, especially the intense interest in abdominal surgery, and perhaps the fact that we can add nothing really new, has, it would seem, caused some neglect in modern literature on the subject of fractures and dislocations.

But, an accident so common and so frequently resulting in permanent deformity and impaired usefulness as a fracture about the elbow joint, may, it has seemed to me, be profitably discussed by this body.

Time and your patience will not allow of anything like an exhaustive review of this subject. I will therefore only refer to some of the more frequent varieties, viz.: fractures of the lower end of the humerus, which are very important by reason of the fact that they are so frequent in early life, and any deformity then contracted will greatly interfere with the most useful period of life.

Gurlt has shown that fracture in this situation is much more frequent than in any other part of the humerus, in fact, according to his figures, more than twice as common as all other fractures of this bone up to ten years of age.

This is probably due somewhat to the greater liability to falls in children and the lateness of bony union in this epiphysis, making epiphyseal separation, which is classed as fracture, very common. Ashurst gives six distinct varieties of fracture, viz.: transverse fracture just above the condyle, complete epiphyseal disjunction, separ-

\*Read in the Section of Surgery of the Minnesota State Medical Society, June 22, 1899.

ation of the external condyle, of the internal condyle, of the epitrochlea, and the "T" fracture, to which might perhaps be added oblique fractures just above or through the condyles.

The widening and thinning of the lower fragment or fragments and the near proximity of the joint makes an accurate diagnosis exceedingly difficult. There is increased mobility, especially in a lateral direction; usually, but not always, crepitus. Wright gives two test lines which may be of value if swelling is not too great. He says that a line can be drawn in any position of the joint from the most prominent point of the internal condyle through the upper border of the olecranon, obliquely downward and outward to the head of the radius, and that such line is bisected at a point corresponding to the superior and external border of the olecranon.

The relation of these lines would obviously be altered in fractures of the internal condyle or the olecranon. He further states that if a line be drawn across the back of the arm in full extension, from the external to the internal condyle, that such line will lie above the upper border of the olecranon.

This latter line I have found of much value, but the former is not often of any use because of the difficulty of accurately locating the head of the radius. This displacement, if the fracture involves the whole breadth of the humerus, is usually backward, often simulating backward dislocation and the widening antero-posteriorly above the joint due to the tipping of the lower fragment, together with increased mobility will usually suffice to differentiate.

It is, however, in fractures that involve the joint, especially the T-shaped fracture and separation of the internal condyle, that the greatest difficulty is encountered, and I would emphasize the great importance of an anæsthetic in all cases in which it is admissible.

As to the prognosis, if the fracture is clearly above the joint, the prognosis is, of course, decidedly better than if the joint surface is involved; but the usual uncertainty in this regard and the great difficulty in holding the short fragments in accurate apposition should make us very guarded.

The treatment of these fractures presents four main difficulties, viz.: holding the fragments as above mentioned; the prevention of an angle above the joint, salient forward; maintaining the normal obliquity of the forearm on the arm; and to obviate stiffening.

If we succeed in regard to the two angles we have little to fear from the other two difficulties, but in the words of Hamlet: "Ave, there's the rub!" If we dress with a well fitting, angular splint we usually have little trouble to correct the anterior angle, but if we remember that as soon as the arm is flexed to a considerable degree we

lose the outward angle of the forearm, which is due to the obliquity of the humeral articulation, the internal condyle being on a much lower plane than that of the external, and the fact that the ulnar articulation is internal to a line drawn longitudinally through the center of the humerus, this causing the whole force of the triceps to pull upwards on the internal condyle, we can easily see that we are practically powerless to prevent this upward slipping if dressed in this position, unless, which seems to me improbable, we can maintain the position by an anterior splint, moulded with an obliquity at the elbow. If, on the other hand, we dress in the extended position, as recommended by Allis and Ingalls, we have much more difficulty with the tendency to anterior angle, together with the fact that it is a very uncomfortable position, necessitating the patient's going to bed. It has therefore seemed to me advisable to combine the two methods in the following manner—to dress in the extended position for the first ten days or two weeks or until some union has taken place in the fragments; then carefully bring it to a right angle and allow the patient to get up. As to the time of beginning passive motion there is a great diversity of opinion among authors; personally I believe each case should be a law unto itself. If a fracture be compound of course it will necessitate a very careful antiseptic toilet, possibly drainage, and certainly a still graver prognosis.

#### AUTOINTOXICATION.\*

By E. STUVER, M. Sc., Ph. D., M. D.,

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Fort Collins, Colorado.

Webber defines autointoxication as a poisoning of the system by the products of its tissue metamorphosis; they may be normal products and do harm by excessive accumulation or may be abnormal, pathological.

During the early period of the germ theory of disease, the germs themselves were regarded as the maleficent agents and the active causative factors in the production of disease processes. Later on it was contended by many eminent authorities that it was not the germs themselves but the toxic materials or toxins which they generated that caused the trouble, and within still more recent years the theory has been advanced that the body, without the introduction of any external disease producing germs or toxic materials, can, by a retrograde metamorphosis of its own tissues, produce virulent poisons which may and frequently do lead to serious derangements and even cause death.

\*Abstract of a paper read before the Wyoming State Medical Society.

It has been clearly demonstrated that intense muscular activity is followed by the formation of organic poisons. This poisoning is, other things being equal, in direct ratio to the intensity of the effort and the amount of muscular tissue involved. Fernand Lagrange, in his work, "Physiology of Bodily Exercise," page 348, says: "In the opinion of all physicians in these days the fevers of overwork, which are observed alike in animals and in men, are due to a kind of poisoning of the body by its own elements, to an auto-intoxication of the system by the products of dissimulation which have accumulated in too great abundance in consequence of excessive work."

Michael Forster, the great physiologist, in a lecture before the University of Cambridge, a few years ago, spoke as follows: "When we have excessive muscular exertion, the weariness may take a form of distress, and if the effort be continued the distress may become so great as to occasion such complete exhaustion that even death may result. In excessive work, of whatever kind it may be, in order for the work to be accomplished there is a greater demand upon the blood for oxygen. There are many things besides carbonic acid which are swept into the blood as the result of the activities of the body; in other words, the product of work in the human body is a poison which must needs be eliminated through the medium of the lungs and the other excretory organs. As physical and mental efforts are continued the eliminating capacity, unless carefully guarded, is marred, the resulting poisons are more and more heaped up in the system, poison the muscles, poison the brain, poison the heart, poison at last the blood itself, starting in the intricate machinery of the body new poisons in addition to themselves. The hunted hare run to earth dies not because his heart stands still, its store of energy having given out, but because the poisoned blood poisons his brain, poisons his whole body."

In view of these facts as to the formation of toxic materials by strong muscular activity, I have long been convinced in my own mind that many cases of mild poisoning following parturition, in which every possible precaution has been taken to avoid external infection, are caused by the long continued uterine action, which, if intense and tonic, in all probability generates toxic materials much more rapidly than they can be eliminated, especially if this action has been rendered more tonic, intense and continuous by the administration of ergot during labor.

I desire, therefore, to emphasize the importance of keeping all the excretory functions of the pregnant and parturient woman in first class working order. My experience has convinced me that a few small doses of calomel, in conjunction with acetate of potassium and sweet spirits of nitre, to each dose of which a couple minims

of tincture of aconite root is added, if the latter be indicated, administered every two hours for a day or two, will arouse the excretory organs and poison-destroying powers of the system and do more to relieve the threatening symptoms than all the quinine and coal tar derivations that can be given to such cases.

In the preface to his translation of Bouchard's work, Dr. Oliver speaks as follows: "Bouchard, in his 'Auto-intoxication, clearly indicates to us that man is constantly standing, as it were, on the brink of a precipice; he is continually on the threshold of disease. Every moment of his life he runs the risk of being overpowered by poisons generated within his system. Self-poisoning is only prevented by the activity of his excretory organs, chiefly the kidney, and by the watchfulness of the liver, which acts the part of a sentinel to the materials brought to it by the portal vein from the alimentary canal," and continuing, he says: "The part played by auto-intoxication in mental disease is attracting attention." It has long been known that the various fluids of the body undergo modifications in the insane. Recent investigation has shown that the urine is much less toxic than normal in cases of mania, while the lethal action of this fluid is increased in melancholia. Maniacal urine gives rise to excitement and convulsions, when injected into an animal, while the injection of urine from a case of melancholia is followed by a depression of spirits, restlessness and stupor—a proof that auto-intoxication is the cause and not the effect of the mental condition.

I believe that every observing physician could bear witness to the fact that many cases of depression of spirits, mental hebetude and general pessimism are due, not to some incipient, serious organic disease, as the patent medicine manufacturer or the blatant advertising charlatan would have the sufferers believe, but are merely the result of the accumulated retrograde toxic products, produced by the normal activities of the body, which, instead of being promptly eliminated, accumulate in the blood and poison the nervous centers, set up disorders of the digestive organs, overtax the liver and lead to almost innumerable functional derangements.

Bouchard, in his classical work, "Auto-intoxication," has clearly demonstrated that normal urine—that is urine taken from healthy persons—when injected into animals produces toxic symptoms, and if sufficient be used causes death. From a careful study of a large number of experiments on animals he arrives at the conclusion that the urine contains substances which produce the following effects, viz:

First—A diuretic substance, which is urea.

Second—A narcotic or truly toxic substance to which a name has not yet been assigned.

Third—A sialogenous substance, or one which produces salivation or an increased flow of saliva.

Fourth—A convulsive substance, fixed, stable, organic, insoluble in alcohol; it might belong to the group of coloring substances from the manner in which it behaves; it is really an alkaloid, since it is insoluble in alcohol, either in the form of a salt or a base. Name not determined.

Fifth—A substance which produces contraction of the pupil; fixed, organic, possibly a coloring substance; probably not an alkaloid.

Sixth—A heat-reducing substance which lowers the temperature by reducing heat production.

Seventh—Another convulsive substance, fixed, inorganic, in short, potassium, whose toxic and convulsive properties have long been known.

Time will not permit me to enter into the details of this extremely fascinating subject, but, en passant, I desire to report a case of autointoxication from retention of urine.

On April 22, 1898, I was called to see a case sixty-five miles north of Rawlins and found the following condition: The woman had been confined with her second child about six days before; the placenta was retained. This was removed and the uterus curetted and washed out by Dr. Calloway, of Lander, Wyoming, about three days after the birth of the child.

I found the woman at 8 o'clock p. m. in great distress, pulse about 120, temperature 104 degrees, F.; tongue coated and foul; bad taste in mouth; no appetite; bowels somewhat constipated and the whole body was covered by a dark purplish eruption very much like that of measles; face, hands and feet greatly swollen. There was no pain nor tenderness of the uterus nor abdominal distension; discharge from uterus about normal in quantity and free from offensive odor. She had not passed any urine for over seventy-two hours, and I drew off seventy-two ounces of highly colored urine, which afforded great relief. I at once began to administer diuretic and eliminant remedies, and the pulse and temperature almost immediately began to fall so that on the following morning they were nearly normal. This treatment resulted in a prompt recovery, but the husband reported to me later on that there was an extensive exfoliation of the epidermis, which came away in great scales, some several inches long.

It is gradually beginning to be more clearly understood that not only are diseases directly connected with the digestive and urinary organs caused by autointoxication, but likewise disorders of distant and special organs are due to the same cause. Dr. Jonathan Hutchinson, writing about the infective materials generated in the act

of inflammation, speaks as follows: "Whilst there can be little doubt that the introduction at the time of the injury of some living germ matter (bacillus) developed in connection with the process of inflammation in the contributor very greatly adds to the risk and gives character to the inflammation induced, there are good reasons for doubting whether any such material is essential. It is highly probable that in some instances a chemical product of decomposition may take its place, and further that in some cases no poison of any kind has been introduced. In the latter group we have to suppose that the tissues of the person wounded are capable of generating as the result of merely mechanical irritation, a poison which shall prove infective. We have to accept the proposition—in all probability a truth—that the inflammatory process, however initiated, is always attended by the production of a virus (living or chemical, or both). Inflammation in its early stages always leads to multiplication of modified cell organisms which may be infective; in its later stages it leads to death of cells and may favor the access to the blood of chemical elements, the result of decomposition which may prove very injurious."

While not relaxing one iota of our care and vigilance to prevent the introduction of external infective materials (indeed, I believe every possible precaution should be taken to prevent such an undesirable contingency,) yet at the same time I believe the facts to which I have called attention above should give us a more comprehensive view of the causes of disease and increase our vigilance in preventing them and enlarge our power of combatting them when existent.

While such a cause should not make us less eager in our search for the specific bacilli, bacteria et id omne genus and their toxins, which cause many diseases, it should at the same time enlarge our mental horizon and impress upon our minds the fact that our whole duty is not comprised in identifying the germ and discovering a germicide to destroy it, but that the afflicted individual should at the same time receive our most serious and earnest consideration. We should strive to secure the elimination of the peccant materials by keeping the excretory organs in good working order and by strengthening the cells and tissues in their fight against their destroyers.

As the individual is the social and economic unit of a nation, and as the strength and resisting power of a nation depends on the health and integrity of its individuals, so the cell is the individual element of the organism and on its strength and unimpaired functional activity depend the health and possibly even the existence of the body.

As money is the circulating medium of a nation, which enables its individuals to exchange

their products, satisfy their wants and gratify their aspirations and ambitions, and as the prompt performance of these necessary functions depend on its free and unimpaired circulation among the individuals comprising the nation, so the blood is the great circulating medium of the body and on the proper performance of its functions depend the health, integrity and functional activity of every cell and tissue of which this body is composed.

In a normal, healthy condition a never ending interchange is going on between the component cells of the body and the blood. If this interchange is free and unimpeded the blood constantly conveys to every cell and tissue the nutrient material necessary for their growth, the preservation of their integrity and their proper functional activity, and receives from these cells their retrograde toxic products and conveys them to the excretory organs, which, if they are in proper working order, promptly discharge them from the body.

When the truth is once thoroughly understood and appreciated that anything which interferes with the functional activity of the excretory organs and prevents the free elimination of poisons not only causes the blood to become loaded with toxic materials and thus renders it less able to take up the retrograde products of cell activity than when it contains a comparatively small amount of these materials, but that the poisoned blood less readily conveys the nutrient material which is absolutely necessary for the life and health of the cells, and that the accumulating poisons inhibit their activity and lessen their power to recognize and combat maleficent agents, when, I say, we once fully appreciate the importance of these truths and realize to how great an extent the welfare of the body depends on the consentaneous activity of the cells, the blood and the excretory organs, we will be able to appreciate the importance of autointoxication as an active factor in the production of diseases.

### A PECULIAR ACCIDENT TO AN EYE CAUSED BY A BUTTONHOOK.\*

BY FRANK C. TODD, M. D.

Minneapolis.

April 9, 1899, C. R., aged 3, was referred to me by Dr. Howard. About the 15th of February last, while the patient's sister was buttoning his shoes the button-hook caught in the thread of a loose button. While trying to pull the hook out the thread broke, and the hook, having suddenly lost its anchor, was forcibly thrust into

the orbit below the eye ball. The little patient quickly grabbed the handle of the button-hook, and jerked it out. Hemorrhage followed, but by the time Dr. Howard arrived bleeding had ceased, and it remained for him to treat the wound antiseptically. As no inflammation developed, they did not come to the doctor again until June 22, when he found the eye turned upwards and a red tumor the size of half a pea in the region of the wound, which he diagnosed (this diagnosis was proven later to be correct) to be a remnant of the ruptured inferior rectus.

Under chloroform anæsthesia, we found this tumor to be the ocular end of the completely ruptured muscle (inferior rectus). A vain search was made for the other end of the muscle, the tumor removed, and the wound stitched. One week later a complete tenotomy of the superior rectus was performed, the capsule of Tenon was loosened well back, and the tendon forced back, every effort being made to gain the greatest effect possible and still retain the function of the muscle.

The photograph shown was taken fourteen months after the operation. From a cosmetic stand-point the results are good, for an ordinary observer would not notice any defect, nor indeed could an expert, except when the eyes were turned down to an extreme degree.

The child is yet too young to make careful tests of the balance of the extra ocular muscles, but I hope to be able to make these tests later.†

† The child died of diphtheria about one month after this paper was read.

After comparing the different tests for the demonstration of bile-pigment in the urine, and showing their lack of delicacy in doubtful cases, Dr. Henry Rocin presents a method which has been tried by himself in Prof. Senator's clinic. He adds ten parts of the officinal tincture of iodine to 90 parts of alcohol; which mixture is kept ready for use. A sample of urine to be examined is poured into a test-tube; which, being held inclined, has from 2-3 ccm. (30-45 min.) of the above diluted tincture poured upon it with great care, so that the same rests upon the urine without mingling with it. Almost instantly, at the plane of contact of the two fluids, a grass green ring is developed, which oftentimes persists for hours. If there is no bile pigment present, the yellow urine has either only a light yellow or colorless ring formed at the meeting of the two solutions. This test has been used for three-fourths of a year at Prof. Senator's clinic, and, after comparing it with a large variety of tests, it has been demonstrated as the most delicate, most reliable, and simplest test for the detection of bile-pigment.—Merck's Bull.

\*Read in the Ophthalmology-Oto-Laryngological Section of the Minnesota State Medical Society, June 22, 1899.

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## THE INVESTIGATION OF MINNESOTA DRINKING WATER.

The report of the State Board of Health for the quarter ending June 30, 1899, contains an account of the beginning of an undertaking of great importance to the community, an enterprise of very considerable magnitude, one that it will take much time, labor and money to accomplish and that will lay a proper and scientific foundation for the future study of the drinking water of the state, placing the Board in a position to report upon analyses from the vantage ground of a knowledge of the normal constitution of the water examined.

It is well known that one of the most convenient and easily applied tests for determining the safety of water for drinking purposes is to find the amount of chlorides which it contains. From the medical standpoint the important thing is to find out whether a given sample of water is contaminated by animal excreta, especially by the urine and fæces of human beings. Water may contain considerable organic matter; it may be unpleasant to both sight and smell through the presence of decaying vegetation; it may be brackish with alkaline salts or turbid with mud and still breed no disease in those who drink it year in and year out. But the minute it becomes mixed with the excreta from human bodies, with the drainage from human habitations, it becomes highly dangerous to those who use it. For practical purposes then, the sanitarian's object in analyzing drinking water is to determine whether

the cistern, well, lake or stream from which the water is taken receives directly or indirectly the drainage from any privy, cesspool, sink or manure heap; the last is dangerous particularly because it often has mixed with the manure the excreta of human beings. An admixture of excrement always increases the amount of chlorides in water. The chlorides may be detected and measured by chemical processes that are simple, rapid and accurate. Hence the selection of this test as a basis for the examination when a water supply is to be investigated upon a large scale.

In order to be of high value, the investigation must show whether the amount of chlorides in water is increased. To know this it is necessary that the normal content of chlorides should have been determined. It is obvious that there is no standard amount of chlorides that water should contain, since local conditions apart from drainage contamination make that amount a constantly varying factor. The State Board of Health has undertaken the task of finding out the normal amount of chlorides in the various waters of the state, so that when a sample comes for analysis the amount of chlorides in the sample may be compared with the normal amount of chlorides in the locality from which the water comes. The purpose of the Board is to construct an isochlor map of Minnesota, the lines on which shall contain those parts of the state whose waters show the same amount of normal chlorine.

The work thus far accomplished has been a partial survey of the southern tier of counties. Owing to the general settlement of the country it was found in many cases that the chlorine of wells represented sewage contamination as well as the natural salts of the soil. It was therefore necessary to supplement the chloride test with an examination into the amount of organic matter and sometimes to determine the amount of albuminoid ammonia. The hardness or alkalinity of the water also furnished a help in making comparisons. The general plan of the work is to stop at stations some distance apart, and if the analyses give similar results to go on; otherwise to make examinations at intermediate points. A long stop was necessary at Houston and eastern Winona counties because of the wide variation in the amount of chlorine in organically pure waters.

The survey also took passing notice of sewage disposal and ice supply. In all some five hundred and ten samples of water were investigated, of which sixty-five were condemned altogether and one hundred and twenty-one considered suspicious. The remaining three hundred and two specimens were found to be available for the purpose of determining the chlorine normal. The discovery of a large amount of chlorine in the springs of parts of Houston and Winona counties was a surprise and has not yet been accounted for such a phenomenon was considered unlikely outside of the Red River valley. The report calls attention to the fact that but for the discovery of the natural high contents of chlorine in some of the fine flowing wells in this part of the state the water might have been condemned as utterly unfit for drinking purposes. How many other parts of the state have natural waters containing much chlorine is yet to be determined. The report further speaks of the interest shown in the survey by the inhabitants of the southern part of the state who did all they could to aid in the investigation.

It will indeed be a pity if the important undertaking just inaugurated be allowed to fall short of completeness through lack of funds. The amount allowed for last summer's work was so scanty that the survey was much hampered and great economy was necessary in order to cover the limited amount of territory investigated. The close settlement of the southern part of the state makes that part of the survey the most difficult; as the investigation proceeds northward it will progress much more rapidly, and in the comparatively unsettled northern counties the work will be not only much easier but there can be no possibility of inaccuracy through lack of allowance for contamination of the water supply by sewage. It is a pity the undertaking did not come earlier; as it is, the best possible will doubtless be done and the results must be of incalculable present and future benefit to the state.

## MISCELLANY.

### THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

The following circular has been issued:

Dear Doctor:—The American National Committee of the XIIIth International Medical Congress, to be held in Paris from the 2nd to

the 9th of August, 1900, in connection with the French Exposition, has been organized.

All doctors of medicine are entitled to membership in this congress by making the proper application and paying the sum of \$5.00. The Secretary-General in Paris has instructed the American National Committee to receive the applications of American physicians, and for this purpose a blank form is enclosed, upon which is to be written full name and address, degrees and any position of note held, together with the Section of the Congress to which the writer wishes to belong. A visiting card should also be appended. These forms, with the \$5.00, are to be returned to the Secretary of the National Committee. He in turn will send receipt and forward the slips and money to Paris, where they will be registered, and in due course of time a card of admission to the Congress mailed to each applicant.

The Committee hopes the American representation in this extremely important medical congress may be as large as possible, and they would urge every member of the profession to enter his name for membership, this alone entitling him to receive a digest of the full proceedings of the Congress and the printed report of the section to which he belongs.

The Sections are as follows:

#### CLASS I.

##### BIOLOGICAL SCIENCES.

A. Section of Descriptive and Comparative Anatomy. Secretary, M. Auguste Pettit, 60, rue Saint-André-des-Arts, Paris.

B. Section of Histology and Embryology. Secretaries, MM. Retterer and Loisel, 15, rue de l'Ecole-de-Médecine, Paris.

C. Section of Physiology, and Biological Physics and Chemistry. Secretary, M. Dastre, à la Sorbonne, Paris.

#### CLASS II.

##### MEDICAL SCIENCES.

A. Section of General Pathology and Experimental Pathology. Secretaries, M. Charrin, 11, avenue de l'Opéra, Paris; M. Roger, 4, rue Perrault, Paris.

B. Section of Bacteriology and Parasitology. Secretary, M. R. Blanchard, 226 boulevard Saint-Germain, Paris.

C. Section of Pathological Anatomy. Secretary, M. Letulle, 7, rue de Magdebourg, Paris.

D. Section of Internal Pathology. (General Medicine.) Secretaries, M. Rendu, 28, rue de l'Université, Paris; M. Widal, 155, boulevard Haussmann, Paris.

E. Section of Medicine of Infancy. (Diseases of Children.) Secretary, M. Marfan, 30, rue La Boétie, Paris.

F. Section of Therapeutics, Pharmacology and *Materia Medica*. Secretary, M. Gilbert, 27, rue de Rome, Paris.

G. Section of Neurology. Secretary, M. P. Marie, 3, rue Cambacérès, Paris.

H. Section of Psychiatry. Secretary, M. Ant. Ritti, Asile de Charanton, Seine (France.)

I. Section of Dermatology and Syphilography. Secretary, M. G. Thibierge, 7, rue de Surènes, Paris.

### CLASS III.

#### SURGICAL SCIENCES.

A. Section of General Surgery. Secretary, M. Walther, 21, boulevard Haussmann, Paris.

B. Section of Surgery of Infancy. Secretaries, M. A. Broca, 5, rue de l'Université, Paris; M. Villemin, 58, rue Notre-Dame-des-Champs, Paris.

C. Section of Urinary Surgery. Secretary, M. Desnos, 31, rue de Rome, Paris.

D. Section of Ophthalmology. Secretary, M. Parent, 26, avenue de l'Opéra, Paris.

E. Section of Laryngology and Rhinology. Secretary, M. Lermoyez, 20 bis, rue La Boétie, Paris.

F. Section of Otolgy. Secretary, M. Castex, 30, avenue de Messine, Paris.

G. Section of Stomatology. Secretary, M. Ferrier, 39, rue Boissy-d'Anglas, Paris.

### CLASS IV.

#### OBSTETRICS AND GYNÆCOLOGY.

A. Section of Obstetrics. Secretaries, M. A. Bar, 122, rue La Boétie, Paris; M. Champetier de Ribes, 28, rue de l'Université, Paris.

B. Section of Gynæcology. Secretary, M. Hartmann, 4, place Malesherbes, Paris.

### CLASS V.

#### PUBLIC MEDICINE.

A. Section of Legal Medicine. Secretary, M. Motet, 161, rue de Charonne, Paris.

B. Section of Military Surgery and Medicine. Secretary, M. Catteau, Ministère de la Guerre, Paris.

Members desiring to present papers will forward the title and a résumé, before May 1st, 1900, to the Secretary of the Section to which they belong, for each Sectional Committee reserves to itself the right of drawing up its own working program. Papers are limited to 15 minutes.

Very sincerely yours,

HENRY BARTON JACOBS,

Secretary American National Committee.  
Baltimore, Md.

### MINNESOTA VALLEY MEDICAL ASSOCIATION.

The nineteenth annual meeting will be held at the Saulpaugh Hotel, Mankato, December 5, 1899, at ten o'clock a. m. The morning session will be devoted to business and the president's address. The program for the afternoon session is as follows:

1. Diagnosis of Diseases and Affections of Anus and Rectum—Dr. C. M. Ferro, Minneapolis.

2. Obstetrical Emergencies—Dr. W. S. Fullerton, Winnebago City.

3. Shock and its Surgical Significance—Dr. John H. Rishmiller, Minneapolis.

4. Rubber Gloves in Surgery—Dr. G. G. Eitel, Minneapolis.

5. Arterio Sclerosis—Dr. W. S. Smith, St. Clair.

6. Report of a Case—Dr. A. F. Strickler, New Ulm.

7. Vaccine and Vaccination—Dr. C. N. Hewitt, Red Wing.

8. State Care of Crippled and Deformed Children—Dr. Arthur J. Gillette, St. Paul.

9. Paper—Dr. H. M. Bracken, St. Paul.

All the papers are open for discussion and members are expected to express their opinion and discuss topics presented.

### THE UNITED STATES CATALOG.

This work contains information about all the books in print in the United States. It consists of two parts alphabetically arranged, one giving authors and the other titles. For subscription price and other information address the publisher, H. W. Wilson, Minneapolis.

### PROFESSIONAL SECRECY AND CRIMINAL OFFENCES.

The British Medical Journal thus gives utterance to its views upon one of the most vexed questions of medicine: What is the duty of a medical attendant who in that capacity becomes aware that his patient has committed a crime? Ought he to give information to the police? It is generally said that he ought. Yet there are cases in which, in the words of an eminent judge, such an action on the part of the medical attendant would be a monstrous cruelty. Quite recently one of the London daily papers, commenting on the position taken up by a medical witness at an inquest, undertook to lay down the law on this very delicate and difficult question. In the case in question the medical attendant of the deceased had, in reply to the coroner, expressed an opinion (from which few, we think, will dissent) that "if the patient was in her proper senses he would hardly consider himself at lib-



erty to disregard her strongly expressed wishes" not to communicate with her relatives.

The writer of the article approves of the courage and straightforwardness of this answer, adding, however, a proviso—"if and so far as the patient's confidences disclose or suggest no criminal or illegal act." And then he goes on: "His" (the doctor's) "first duty, of course, is to the law of his country, and if the facts revealed to him raise any suspicion of crime or foul play, he could not for one moment be justified in complying with her request for secrecy. To do so would be to make himself an accessory to a breach of the law."

On the other hand, a medical correspondent writes: "Not long ago I was called to a young lady who, after a lover's quarrel, attempted suicide with chloroform, and nearly succeeded. This was a crime on her part; but surely I am not to lay information, and by not laying information am I not making myself an accessory to a breach of the law?"

Now, which of these two opposite views is the right one? Let us see how stands the letter of the law. Is it an offense cognizable by the law of England to hold one's tongue about a crime that one knows to have been committed? The answer is doubtful. There is an offense known to the learned in the law as "misprison of felony," which is defined in Russell on Crimes as "a concealment of felony or a procuring the concealment thereof . . . . and silently to observe the commission of a felony without using any endeavor to apprehend the offender is a misprison; a man being bound to discover the crime of another to a magistrate with all possible expedition. If this offense were accompanied with some degree of maintenance given to the felon, the party committing it might be liable as an accessory after the fact." This definition may appear at first sight to answer our question in the affirmative, yet if closely looked at it may fairly be doubted whether it includes the case of a person merely discovering evidence that a crime has already been committed, he not having observed the actual commission of the crime, and having done nothing wilfully with intent to conceal it.

There is no doubt that the offense defined above is recognized by the law, but it is equally undoubted that the law has not been enforced for many years; and, except in some very glaring case, we may be sure it never would be enforced by legal penalties, even against a person who stood in no confidential relationship to the felon. In fact, the offense of misprison is not even mentioned in so complete a work as Archbold's Pleading and Evidence, and its existence is probably unknown to ninety-nine out of every hundred lawyers.

As for making himself an accessory after the fact, mere knowledge of the fact without anything

done to assist the felon to escape apprehension or trial would not make an accessory. There must be some act proved to have been done to assist the felon.

So far, therefore, as legal penalties are concerned, the ordinary citizen has little to fear for simply holding his tongue; and the medical attendant has even less to fear. For although the law of England, unlike that of most civilized countries, does not recognize the inviolability of professional confidences between patient and doctor, yet in practice the judges, with whom a discretionary power as to compelling disclosure rests, can and do take account of the circumstances.

We have stated the letter of the law as laid down by writers of the highest authority. Now let us see in what spirit the administrators of the law interpret it. What says Sir Henry Hawkins—no namby-pamby sentimentalist, but one of the sternest, as he is the most experienced, of the judges in all that pertains to crime and criminals? Our readers will recall his very remarkable obiter dicta in the case of *Kitson vs. Playfair*.

Sir John Williams, speaking as an expert witness with regard to the exceptions to the general rule of the inviolability of professional confidences, had just declared that, "with regard to a crime a medical man is obliged to inform the public prosecutor of any crime which has been committed or is intended to be committed."

The judge (Sir H. Hawkins): "Suppose a medical man were called in to attend a woman, and, in the course of his professional attendance, he discovers that she has attempted to procure abortion. That being a crime under the law, would it be his duty to go and tell the public prosecutor?"

Sir J. Williams: "The answer of the College of Physicians to that very question was 'Yes.'"

Sir H. Hawkins: "Then all I can say is that it will make me very chary in the selection of my medical man."

Two days later, in his summing up, the judge liberally returned to the same subject:

"He could not altogether agree"—we quote from the Times report—"with what Sir John Williams and Sir William Broadbent had said as to exceptions to the rule imposing secrecy. As to giving evidence in a court of justice, it all depended upon the judge. He might refuse to commit a medical man for declining to disclose confidences. Each case would be governed by the particular circumstances, and the ruling of the judge would be the test. Secondly, they said that if there were circumstances from which they supposed a crime was intended to be committed they would have to inform the public prosecutor. If the doctor were called in merely to attend a woman needing physical aid, his lordship doubted very much whether he would be justified in

going to the police and saying: 'I have been attending a poor woman who has been trying to procure abortion.' That would be a monstrous cruelty. Therefore, to say there was a general rule was going too far. There were cases, no doubt, in which it was obvious that a medical man should inform. He only protested against that rule being said to be applicable in all cases."

It seems, therefore, that the judges do not uphold the doctrine that the medical attendant is bound under all circumstances to give information. The time may come when they will say he is never bound to do so—when they will recognize the right of the medical man to respect the confidence reposed in him, unless and until he is ordered by the court to violate it. Meantime, we can give no help for the solution of the many painful "cases of conscience" which medical men are confronted with beyond recommending them to "mark, learn, and inwardly digest" the words we have quoted from Sir Henry Hawkins.

We have been speaking throughout of crimes committed, not of crimes contemplated. The latter stand on a totally different footing, but we have not space to discuss them here.

## NOTES.

### Blennostasine.

Will you allow me to say, after a severe clinical test of Blennostasine, for now nearly one year, that so far as I am concerned, it has passed its experimental stage. I have, with the assistance of this preparation, in cases of hay fever and asthma, done more toward curing (and in every instance giving quick and lasting relief), than with all other preparations at my command added together. Given in proper doses, beginning ten or a dozen days previous to the time of an attack of hay fever, it has never failed to ameliorate, and in the majority of cases prevented entirely the occurrence of the attack. You will be surprised, after once trying, at its "jugulating" asthma. I have had experience in treating the above disease, and have, I think, given an impartial trial to nearly every remedy recommended by our best authorities, and have used as well many of the advocated proprietary medicines, but, as before said, none of them has given both the patient and myself the satisfaction obtained by the persistent use of Blennostasine. I could enumerate several cases of long standing where the dread of suffering is a thing of the past. Get your patient under the influence of the medicine (I mean push it to the physiological effect) as quickly as possible, then maintain said effect by small doses, often repeated, for the desired time, gradually decreasing the dose at the quitting time. To abort a "cold in the head," acute

coryza, you need nothing better, nor one which will act more quickly. Certainly it does not interfere with any local treatment.

### Punished for Substitution.

A decision of considerable importance was made by Judge Kohlsaas in the United States Circuit Court yesterday. In a bill for an injunction Fairchild Brothers & Foster, of New York, had charged Edward Otto, a Chicago druggist, with substituting a spurious and inferior preparation for "Fairchild's Essence of Pepsine" in several cases where the latter was expressly called for in physicians' prescriptions. The case was hotly contested and hundreds of pages of depositions were taken in New York and Chicago. Judge Kohlsaas's decree sustains the charges made, perpetually enjoins Otto from ever repeating the offense and taxes him with the costs, amounting to about \$500. This is said to be the first contested case in the United States in which the principle of protection to trade-marks and trade names was extended so as to apply to what is technically known in the drug business as "substitution." Judge Kohlsaas's decision will probably protect manufacturing chemists, physicians, and the general public, all of whom have in the past suffered from these fraudulent practices of a certain class of druggists.—Chicago Times-Herald, Oct. 13.

### An Unexcelled Uterine Tonic.

Dioviburnia is, without question, the most efficient uterine tonic and antispasmodic attainable. Unexcelled in dysmenorrhœa, amenorrhœa, metrorrhœgia, leucorrhœa, menorrhœgia, miscarriage, threatened abortion, vomiting in pregnancy, subinvolution, uterine and ovarian neuralgia, etc.

In female neurosis combine neurosine with Dioviburnia equal parts. Dioviburnia, we are warranted in praising from past clinical experience of the ease and rapid absorption and assimilation for safe administration, prompt results and reliable action as a uterine tonic.

### Catarrhal Influenza.

Dr. William F. Kier, of St. Louis, one of the most active and successful general practitioners in the whole country, has used the following prescription with most satisfactory results in the treatment of catarrhal influenza so prevalent during the fall, winter and spring months:

Tid<sup>4</sup> etaoim shrdl ucmfwyp shrldu etaoim  
 R Tongaline (Mellier), 3 ounces.  
 Papine, ½ ounce.  
 Tinct. Capsicum, ½ dram.  
 Syrup Ginger, ½ ounce.

## ORIGINAL ARTICLES.

## THE PRIMARY TREATMENT, IMPROPER AND PROPER OF LACERATED AND CONTUSED WOUNDS OF THE HANDS AND FEET.\*

BY WALTER COURTNEY, M. D.,

Brainerd, Minn.

One might be excused for questioning, on first thought, the necessity for presenting a paper on the primary treatment of lacerated and contused wounds of the hands and feet. He might also ask: "Is not the treatment of these cases, usually, simple enough and satisfactory?" However, when he reflects he is likely to recall instances where the treatment was neither simple nor satisfactory as regards either the progress or the outcome of the case. On further reflection he is surprised to note how little, comparatively, has been said or written on the subject. Also he begins to realize that these cases form no inconsiderable share of his surgical practice. The general practitioner, as well as the man devoting a large part of his time to surgical work, meets with more or less of them, and in consequence, I hope to interest all.

In fulfilling the duties of a railway surgeon for more than a decade of years, and with a large amount of hospital work, it has been my fortune to see and treat hundreds of these cases, chiefly, of course, among railway employes. However, it matters not, so far as the treatment is concerned, whether the injured person is a railway or non-railway employe; he is usually a laboring man, with hands and feet difficult to render surgically clean in any case.

Having so frequently observed unsatisfactory, deplorable and even calamitous results following the customary treatment of this class of surgical cases, I felt constrained to bring this subject before your notice at this time. In doing so I will speak of the usual or customary treatment as the improper treatment, and of the plan I now follow as the proper treatment. I will describe the improper treatment first, in order that I may more strongly contrast the proper treatment with it, and at the same time will call attention to its faults and often bad results.

**Improper Treatment.** When a case of lacerated hand or foot, such as that produced by machinery, presents itself to the surgeon, the first question that arises is, must any part or the whole be sacrificed or can any part or the whole be saved. This is a momentous question. The answer will largely depend on the judgment and

experience of the surgeon, and much will depend on the treatment. It is a cardinal rule of surgery today to save any portion of the hand that can possibly be saved, and to save as much of the foot as may be useful in locomotion, or as will obviate the necessity of wearing a cumbersome and complicated artificial appliance as a substitute. The surgeon having decided the question of saving or sacrificing, proceeds accordingly. He scrubs with soap and water, sometimes shaves the part, oftener does not, and then liberally applies a bichloride of mercury solution, and too often fancies that he has the part surgically clean. The next step will depend on whether he has decided to save or sacrifice. If the soft parts, only, are lacerated he will probably attempt to save. If the soft parts are much lacerated and the bones fractured and joints opened up, he may (probably will) decide to sacrifice. If he decides to save he will arrest hemorrhage, remove ragged tissue and all dirt and foreign matter he can see, place the remaining parts in apposition, suture all neatly, or otherwise, according to his habit, and usually close the wound without drainage, having an abiding confidence in his efforts at a sepsis, or surgical cleanliness. If his decision is to sacrifice he makes careful efforts at shapely flaps and closes the stumps with sutures, and without, or with only deficient drainage. He puts on a more or less liberal dressing and usually is unsparing with iodoform, in the form of powder, gauze, or both. Unless the injury is very extensive and severe he is not overcareful in his instructions as to rest and the position of the part, nor in details as to diet and attention to regular action of the bowels.

The next case that presents itself to the surgeon may be as follows: The hand or foot has been badly contused and somewhat lacerated (the skin broken) and some of the bones fractured by being caught between the bumpers in making a coupling, or crushed by a car or wagon wheel. On examination, the condition that seems to call for most urgent and immediate treatment is the reduction of the swelling resulting from the contusion. The treatment followed will be to cleanse the hand, or foot, probably as before, and, if possible, suture the laceration. For the reduction of the swelling a wet dressing of boracic acid, hamamelis, or something else, is applied, rubber tissue or oiled silk being used to prevent too rapid evaporation.

What are the faults of this plan of treatment? I will enumerate some of them. First, no part of a hand or foot should ever be sacrificed in the beginning of the treatment as long as there is a reasonable certainty that the blood supply has not been wholly destroyed or exposed bones can

\*Read in the Section of Surgery of the Minnesota State Medical Society, June 22, 1899.

be reasonably well covered with the protective soft parts. Owing to the remarkable blood and nerve supply of these parts, it is often astonishing how the worst lacerated tissues may live, when properly treated. Hence, many amputations, made at the time of first treatment, are unnecessary sacrifices and permanent wrongs against the patient. Second, it is a fallacious idea that the injured hand or foot of a laboring man can, at this time, by any reasonable amount of scrubbing or use of bichloride of mercury solution, be made surely surgically clean, except possibly, in a few instances, and these instances we have no certain knowledge of at the time. The surgeon, with painstaking care, may remove all dirt and foreign matter that he can see and still fall far short of removing all infective matter in the wound. Third, if we are uncertain as to our asepsis, then we should not close the wounds with sutures. The wounds should not be closed at this time. Fourth, the so-called wet or moist dressing (practically a poultice, and which would certainly be condemned under that name), should never be used at this time. It mainly serves to loosen the dirt in the skin, which the scrubbing did not remove, and convey it into the wound, and, by its heat and moisture, promotes the rapid growth of germs in the damaged tissue, which have been only too well prepared, by the damage, to furnish an easy point of attack. Fifth, the free use of iodoform, in crystals, powder or gauze, is a common fault. Filling the wound with the loose article tends to prevent drainage and healing, probably causing a negative or repulsive chemotaxis of the ameboid cells in the adjacent tissues. Its careless application, in any form, to the skin of these parts, where moisture is likely to be present, frequently results in an annoying and troublesome dermatitis. Sixth, the patient should not be dismissed to his home (they are frequently office cases), with only a few meagre instructions as to rest, position, care of the digestive tract, and impositive orders as to his return for dressing or observation.

Of all these faults the greatest is the injudicious use of the suture. Of the untoward results following this plan of treatment, I will mention quite enough to show why it should be condemned. Among the most common is immediate infection of the wound from the inclosure, by the suture, of germ-laden dirt which could not be detected in the cleansing process. So frequently is this the case that I find it necessary in at least seventy-five per cent. of the cases that come to our hospital (which is as soon as they can reach there after the primary dressing), to promptly remove all sutures, reopen the wounds and fill them with aseptic gauze so that drainage can be secured. Twelve to twenty-four hours is frequently long enough to produce evidence of local infection. During this time the patient has

suffered distressing pain caused by the retained effusions, tension of the parts and the incipient inflammation. The prompt reopening of the wounds, with provision for free drainage, frequently places the patient beyond peril of greater suffering and imminent danger of more serious complications. Unfortunately the infected wound cannot always be dealt with in the above manner. And even if it could, greater mischief is not always to be averted. Extensive cellulitis; lymphangitis and lymphadenitis; septic involvement of the tendons and their sheaths; sloughing of the skin and deeper tissues; periostitis; osteomyelitis; occasionally, phlebitis; and not infrequently general septicæmia, so profound in some cases as to cause death, may follow such original treatment of these wounds. This is no overdrawn picture. Many times after such wounds have been so treated have I had to riddle the hand or foot with drainage openings, and resort to every measure in trying to overcome local and general infection. Even amputation of a part or the whole member, because of serious involvement of the bones, or for the removal of an overwhelming poison-producing center, may be the only alternative. Death itself, as a result of such treatment, it pains me to say, I have witnessed on several occasions. Should neither of these graver results follow, there is a strong probability of a crippled hand or foot remaining because of extensive sloughing, drainage tracts and involvement of the tendons and their sheaths.

I have vivid mental pictures of some of these sad cases. Allow me to project one before your mental vision: A few years ago a healthy, vigorous young man of 28 years, a laborer, received a very severe contusion of the hand and wrist, with a rather small laceration on the dorsum. Soon after, the injured hand was dressed by a local surgeon. He cleansed it, put in a small drain through the laceration, applied a moist dressing and, as soon as possible, sent him to our hospital, where he arrived next day, thirty hours after the injury. Local infection was then evident, soon after general infection, and, in spite of the most thorough, even heroic treatment he died in five days after the injury was received.

Having said so much with the intention of showing how imperfect and unsatisfactory such treatment usually is, I will endeavor to show that it is also improper by detailing other methods that, though not perfect, have nevertheless given altogether different and more satisfactory results. While condemning the method of treatment described as "improper", I do not wish to maintain that satisfactory results are not sometimes obtained by its use. In a rather small proportion of cases they are.

I will now detail the treatment such cases as the foregoing receive at the hands of myself and my assistants under my direction, and in contra-

distinction to that already described will designate it as the proper treatment, or the best I am acquainted with at this time. When a case of lacerated wound of hand or foot presents itself, a careful inspective, and possibly manipulative examination is made. Serious hemorrhage, which is not common in these cases, if present, is, of course, given immediate attention. Then, either with or without an anæsthetic, most careful cleansing is undertaken. Not only the immediate neighborhood of the wound but the whole member, to a wide extent beyond the wound, is cleansed as thoroughly as possible. Soap and water with gentle, but thorough, use of a good brush will not only remove loose dirt and epithelium but will also cleanse creases, wrinkles, lines and irregularities of the skin. Where there is adherent grease it may be necessary to use alcohol or ether to remove it. Where dirt is ground into the wound it is often well to apply the brush lightly and gently to the wounded surfaces, first with the soap and water and then with the irrigating fluid streaming on. All shreds of tissue, pieces of skin that are dead or certain to die and loose nails are removed. The remaining nails are carefully cleansed. The whole region that is being cleansed, if not shaved at first, is shaved now. A 1-2000 bichloride of mercury solution is thoroughly applied to the whole region, usually with a gauze sponge so as not to get too much of it into the wounds, and then all is irrigated with warm, sterile normal salt solution. Sterile, or wet bichloride towels are laid about or used to wrap up such portions as do not require to remain uncovered. If the assistant who is required to hold the arm or leg has not thoroughly cleansed his hands he must cover them with a wet bichloride towel. The instruments, all materials, ligatures, dressings, etc., must be as sterile as for any other important operation. The whole region is now thoroughly examined to learn the full extent of the injury and to remove any previously undiscovered foreign matter, or tissue certain to necrose. Having arrested profuse hemorrhage, reduced, if present, fractures or dislocations, and there being no necessity to sacrifice any particular part, strips of non-irritating, antiseptic, or even plain sterile gauze, are packed lightly into every possible recess, every opening, every gaping wound. No attempt is made to closely approximate the edges of any wound at this time. A voluminous dressing of sterile gauze and absorbent cotton is applied and carefully, but not too tightly bandaged. Seldom are antiseptic powders used. If the dressings do not support and keep at rest the part, sufficiently, then a splint for that purpose is applied outside of all other dressings.

Should the injuries have been so severe that amputation of a part or the whole is a necessity, beyond question of doubt, no attempt is made to

secure neatly fitting flaps; only sufficient tissue, of the soft parts, as will, no matter how, adequately cover exposed bone is required. Every effort is made to reduce the loss to a minimum. The flaps are left open and the wound packed with gauze as in the case of a lacerated wound. If the injury has been such that extensive contusion is the worst feature, the same details as to cleanliness are observed. The lacerations, if present, are thoroughly packed and drained with gauze. If there are extensive hemorrhage effusions beneath the skin these are drained through incisions in the same way, particularly so if the skin above is likely to become gangrenous. Voluminous sterile dressings are applied and the whole limb put at rest; no wet dressings are ever used at this time. Emergency amputations of the leg or forearm, where a sepsis is difficult to secure, and time pressing on account of shock, are usually treated in the same way, without suturing of the flaps.

The patient is required to keep quiet after the first treatment or operation. Everything is done to keep the injured part at rest. A saline cathartic is given at once and daily for some time after. Only light food is ordered for a few days. The temperature and pulse are taken night and morning and on the condition of these, as well as the probable amount of drainage, will depend when the next dressing will be made. It may be made within twenty-four hours or not for four or five days. Usually when the dressing is made no irrigating is done, only sponging with gauze wet with bichloride or sterile normal salt solution. If necessary to remove the gauze packing and replace it with new this can be done with such gentleness as to cause but little pain. At the end of four to six days, when the granulating process is about to begin, and if no infection is present, all packing and drainage is removed, the edges of the wound or flaps are brought together, or nearly so, by the pressure of a gauze dressing folded in bandage form. A little later adhesive plaster may be used if required. If found really necessary silk worm gut or silver wire sutures can be, at this time, applied with good results. By treating these wounds in this manner they will be but a few more days in healing than those that are closed by suture at the primary dressing and give no trouble afterwards. Further, the cicatrices and stumps will present an equally good appearance, if not at once then very soon after.

Scarcely a day passes at our hospital in which we are not called upon to care for injuries of this kind among shopmen, switchmen, trainmen, in short all classes of railway employes. Treating them as I have just described, probably not more than five per cent., certainly not more than ten per cent give us any trouble or anxiety or fail to do well. On the other hand, of those that have

been treated by the usual method, with the use of the suture, and sent to our hospital, at least seventy-five per cent. give us much trouble and often great anxiety. By our method they recover promptly, with but little pain, with a minimum of loss of most important parts and the slightest impairment of function. By the common method recovery is frequently delayed, there is more or less severe pain, not infrequently losses of great anatomical value, and frequently greatly prolonged or permanent impairment of function. The great value of the method we follow, I believe to lie in treating these wounds in a perfectly open manner. The very free drainage that is furnished practically renders innocuous any septic germs that may have been carried into the injured tissues. Nature is given time and opportunity to throw out an abundance of leucocytes in the immediate neighborhood of injury, thus building up her wall of defense against germ invasion, and the fixed cells are not hindered in the process of multiplication necessary for repair.

The long period of personal observation in such a great number of these cases has made it a matter of intense interest to me, hence my reason for bringing the subject before you in a rather lengthy manner. If I have aroused a degree of interest in you that will result in profitable discussion, I shall feel flattered and well repaid.

## SUPPURATIVE DISEASE OF THE ACCESSORY CAVITIES OF THE NOSE.

### THEIR SYMPTOMATOLOGY AND DIAGNOSIS.\*

BY C. E. BEAN, M. D.

St. Paul.

In considering the symptomatology and diagnosis of suppurative disease of the accessory nasal cavities it will be necessary to a complete study of the subject to consider each one more or less separately, for while there are certain symptoms common to any and all the cavities, each one has its own peculiar characteristics.

The accessory cavities of the nose are the antra of Highmore, or maxillary sinuses, the anterior and posterior ethmoidal sinuses, the frontal sinuses and the sphenoidal sinuses. We will first take up the subject of suppurative disease of the maxillary sinuses.

**Symptomatology:** In the acute stage or where the serum is first poured out and its discharge is prevented by the closure of the normal opening into the nasal cavity, pain referable to the affected region, together with a sense of ful-

ness and weight are the prominent symptoms. The pain grows rapidly worse, becoming of the most agonizing character and extending to the eye, teeth and roof of the mouth. This increases until relief is obtained, either by the hands of the operator or by the discharge of the serum and pus through the ostium maxillare into the nasal cavity. Then the pain subsides, to return again when obstruction to the free flow of pus recurs. It is an almost universal rule that where we have a chronic inflammation of a mucous membrane with hypersecretion in a closed cavity, the tendency of the process is very rapidly to develop into purulent action.

In those cases where the disease is chronic from the beginning and where the ostium maxillare remains patulous, allowing for the free escape of the muco-pus, the pain is slight and intermittent in character, the chief symptom being a discharge of bright yellow pus, generally free from odor, from the corresponding nasal cavity.

In other cases, the pain is very insignificant, or may be entirely absent, the only prominent symptom being the discharge of sero-pus and minute blood clots from the nose. Later in the disease the roots of any teeth projecting into the cavity of the antrum become carious from the resultant periostitis.

**Diagnosis:** An intermittent unilateral discharge of pus from the anterior nasal cavity is the most suspicious symptom of the existence of empyema of the maxillary sinus and should always lead to a very careful examination of the nasal cavity, for a discharge of pus from the nose can only come from one of the following causes, viz: the prevalent rhinitis of children, diphtheria, foreign bodies, rhinoliths and disease of the accessory cavities. The first four are readily recognizable, so that it only becomes necessary where they are excluded, to determine which cavity is the seat of the empyema. In making an examination of the nose, a solution of cocaine varying in strength from four to ten per cent. should be first applied to contract the tissues; an examination then being made, bright yellow colored pus will be found in the middle meatus, and, if the discharge is free, covering the lower turbinated bone and the floor of the nose. Now we know that this pus comes from either the antrum, the frontal sinus or the ethmoidal cells. Carefully wiping away this pus by means of a pledget of cotton wrapped on a small probe, the pus will be found exuding from beneath the anterior end of the middle turbinated bone. If now the cotton applicator be pressed against the point from which the pus apparently comes the manipulation will be followed by a free flow of pus having a more or less offensive odor. If the pus is thick it may merely protrude through the opening. The question of determining which

\*Read in the Section of Ophthalmology, Otology, Laryngology and Rhinology of the Minnesota State Medical Society, June 23, 1899.

cavity the pus comes from now arises, and is not easily decided; but if after cleansing the parts of all visible secretion we direct the patient to lie down on the unaffected side for a few moments, the discharge from the antrum will be facilitated and will flow into the nose, while there would be no tendency to the escape of pus from any of the other cavities. Frankel directs that the head should be placed well down between the knees and towards the unaffected side for some moments, then if there be any appearance of pus beneath the middle turbinated body it is probably from the maxillary sinus. The antrum is probably filled up to the normal opening all the time, and flows out only as it increases above this amount or is favored by the position of the body. The situation of the ostium maxillare varies in different individuals. In some instances it is located so high up that the antrum becomes full and you have a discharge posteriorly, and high up in the naris that is very readily mistaken for ethmoidal disease.

Tenderness on pressure, if it exists over the canine fossa is a sign of some diagnostic value.

Transillumination of the cavities by means of an electric light in the mouth is something with which I have had no experience, but I should consider it of little diagnostic value, besides being unnecessary and misleading, for, as has been pointed out by different observers, the bones vary in their degree of thickness and the cavity of one antrum may be very small, while the other may be unusually large. The cavity itself may be entered through the inner wall of the antrum in the middle meatus just below and posterior to the hiatus semilunaris, where there is little or no bone to penetrate. This may be done either with a spear-shaped knife, as recommended by Mikulicz, or with the curved trocar and canula of Krause. This procedure is not practicable where the nasal chambers are narrow or the septum is deflected or where there is marked hypertrophy of the inferior turbinated bone. Puncture of the antrum can be made in the outer wall through the canine fossa by means of a strong, curved aspirating needle, the incision being made in the gingivo-labial fold above the second molar tooth. Another method, as recommended by Roe, is first to drill a small opening in the anterior wall through the canine eminence and with a probe find out the exact position of the cavity, then through the opening made introduce a saw and saw out of the anterior nose just the sized piece desired. It is also advantageous in that the edge of the opening is smooth instead of being slivered as when made with a pair of ronguer forceps. If the first or second molar tooth is carious, it may be removed, and entrance gained through the alveolar process, but otherwise it should not be done merely for the purpose of diagnosis.

Another point of value as pointed out by J. N. Mackenzie in making a diagnosis of disease of any of the accessory cavities of the nose, is that the pain is entirely relieved for the time by forced Politzerization. When we have a closed sinus in the nose there is a disturbance of the aërostatic equilibrium; the membrane sags and pain is the result. If by forced Politzerization we can open up the sinus the pain disappears. This is sometimes our only means of determining the source of pain in the head. It should be done after the parts have been thoroughly cocaineized so as to contract the rectile tissue and reduce the resistance of the soft parts to a minimum.

#### ETHMOIDAL DISEASE.

The most common of the earlier symptoms of ethmoidal disease is deep seated pain referable to the orbit and lower frontal region, generally confined to one side with muco-purulent discharges through the rhino-pharynx and anterior nares. In acute cases, where the secretion is retained, the pain increases rapidly and extends to the whole side of the face and temporal region. The pain in chronic cases is due to the retained secretion and the existing periosteal disease.

The discharge generally sets in early, and is of a bright yellow color with a peculiar fœtid, hydrogen odor; as the discharge becomes more free this disappears, but returns with the development of necrosis, when it has the characteristic dead bone odor. When the cells become distended with pus they give way on the side of least resistance, which is toward the orbit, causing a bulging of the eye accompanied by impaired vision and immobility.

The direct communication between the exophthalmos and the pus discharge may be demonstrated by the fact that pressure upon the eye ball causes a flow of pus into the nasal cavity.

With disease of the ethmoid cells there is set up a train of symptoms of a neurotic character, such as a watery discharge from the nose, violent sneezing, attacks of asthma, headache, neuralgia, intermittent in character, asthenopia and especially what has been called aprosexia, one of the most distressing features of the disease. This is a mental disturbance consisting of an inability to fix the attention upon any subject, accompanied by headache, an inability to think clearly or to comprehend what is read, and due to over-study or prolonged irritation in the throat or nasal passages.

The pus finds its exit through one of the normal openings either in front into the hiatus semilunaris or through the posterior opening into the superior meatus. The pus from the anterior and lower opening makes its

way into the lower meatus and is expelled from the anterior nares, while the discharge from the posterior opening makes its way into the pharynx. The escape of this pus into the nasal cavity, while the most natural course, is not invariable, for in a large number of cases it escapes into the orbital cavity through the os planum, giving rise to exophthalmos and orbital disease.

Diagnosis.—The diagnosis of acute inflammation and stenosis of the ethmoidal cells is often extremely difficult, and can only be made from the subjective symptoms. In chronic cases, where there is free discharge, it is less difficult.

Examination of the nasal cavity will reveal bright yellow colored muco-pus, coming from beneath the middle turbinated body on the affected side. A muco-pus discharge from the septal side of the bulla ethmoidalis is a positive evidence of the presence of suppurative disease of the ethmoidal cells. The question of whether the pus flows over the anterior or posterior end of the turbinated bone is not easily settled, for when the discharge is thin and free it diffuses itself over the entire surface. From the inflammatory process and the distension which breaks through the outer cell walls, the middle turbinated bone is crowded outwards and there is gradually an extension of the cells into this body; this gives rise to a protuberance into the middle meatus, which is easily recognized in the rhinoscopic mirror, the middle turbinated bone presenting as a rounded ovoid mass, usually in contact with the septum and sometimes almost closing the middle meatus.

The diagnosis in most cases must be made from the existence of the pus together with the exophthalmos and pain.

#### SUPPURATIVE DISEASE OF THE FRONTAL SINUSES.

Symptomatology.—Constant frontal pain, at first dull and then becoming lancinating in character as the serum distends the cavity, is the most prominent symptom of suppurative disease of the frontal sinus. This is made worse by stooping or bending the head forward. There is pain on pressure at the root of the nose over and under the supraorbital ridge and redness and swelling of the skin over the affected sinus. The pain is increased by mental effort or the use of alcohol. When the pus can escape through the fronto-nasal duct into the nasal cavity, relief from the severe pain is obtained. When the exit to the pus is obstructed the orbit may be so crowded as to cause displacement of the eyeball. Should the pus escape into the cranial cavity we have the symptoms of meningitis.

It may escape into the orbital cavity, for as Zuckerkandl has pointed out, there occasionally

occurs a defect in the bones of the orbit by which a permanent opening exists in the roof of the orbit through which pus may make its way.

Diagnosis.—The diagnosis can usually be readily made from the history of the case, the location of the pain, tenderness, and the discharge of the characteristic yellow pus in the region of the middle meatus, and if distention occurs, from the displacement of the orbital plate and the evidence of external deformity. In making a diagnosis of frontal disease we should not overlook the fact that in quite a proportion of cases there is only one frontal sinus for the two sides, or in other words, there is no partition between the two frontal sinuses, so that a patient may have a right frontal sinusitis and a left sided discharge, or vice versa.

#### SUPPURATIVE DISEASE OF THE SPHENOIDAL SINUSES.

Symptomatology.—The subjective symptoms of a suppurative disease of the sphenoidal sinus are a discharge of bright yellow pus from the nose into the pharynx, together with a deep seated pain over and behind the eyes. This pain is sometimes of the most distressing character, involving all of the branches of the fifth nerve. As the disease progresses impairment of vision or complete blindness may occur as the result of pressure on the optic nerve, and exophthalmos may be developed. Sudden blindness is followed in a certain proportion of cases by orbital abscess.

Diagnosis.—Where the usual passages are not obstructed and a thorough rhinoscopic examination can be made a diagnosis of sphenoidal disease is not difficult. If this can not be done it may become necessary to remove the posterior end of the middle turbinated bone so as to obtain a clear field.

The bright yellow colored muco-pus is seen pouring from the superior meatus into the pharynx, giving rise to the ordinary symptoms of a naso-pharyngeal catarrh. When the conditions are favorable pus can be seen posteriorly coming from the normal opening situated above the superior tubinated bone in the anterior sphenoidal wall. Examination with the ophthalmoscope reveals a swollen disc characteristic of pressure on the optic nerve.

Disease of the accessory nasal cavities occurs in the following order of frequency: Ethmoid cells, maxillary sinus, sphenoidal sinus and frontal sinus.

In this paper I have quoted from the writings of Bosworth, J. N. Mackenzie, Roe, Swain, Bryan and Myles.



## LIFE ON THE ARMY TRANSPORT.

BY H. P. RITCHIE, M. D.

Late Captain and Assistant Surgeon 13th Minnesota Regiment.

St. Paul.

The news of Dewey's magnificent victory in Manila bay threw additional burdens upon the already overtaxed government which had brought into use every available source of supply and every scheme of transportation for the campaign in Cuba. When Montojo's fleet was destroyed and the call came for troops to assist the men-of-war in the Philippines, it took those in charge some time to appreciate the magnitude of the undertaking. The transport service to Cuba, a comparatively short distance, and involving a short time, was receiving some little criticism, but this new event meant the forwarding of large bodies of men some 8,000 miles across the Pacific to a practically unknown tropical country. How we, as the 13th Minnesota V. I. fared upon that voyage, compared with the return journey, may be of some interest to the readers of the Lancet.

Such pressure was brought upon the quartermaster's department at San Francisco to procure transports that many boats were accepted and put in use that have since been rejected from service, but generally speaking, considering the times and the circumstances, the choice of vessels was excellent. The chief objection to many of them was their small capacity, thus necessitating the dividing of commands. The opportunity was given the 13th regiment to leave with the second expedition, providing the regiment be divided, but with excellent foresight our colonel decided to wait for the third expedition, thereby obtaining the finest and fastest vessel, large enough to accommodate the entire command. The City of Para was selected, chartered from the Pacific Mail Steamship Company. She was staunch and sea worthy, officered by men who had had every opportunity to become proficient in their work. Over 1,000 soldiers were placed upon this boat, with sufficient subsistence for a four weeks' voyage, and carrying a great quantity of ordnance, quartermaster, commissary and medical stores, not for our own regiment alone, but for the troops who had preceded us upon the field. Very few officers of the regulars or volunteers had had any experience whatever in this new feature of warfare and in the great hurry to be off many essential details of preparation were omitted and one upon our boat came near being disastrous. It was soon found that the cooking facilities were very poor indeed. Two rather small ranges only were provided for the preparation of food. By using the ranges night and day, not loosing one moment's time, it was possible to get a sufficient

quantity prepared. But many times the vegetables were uncooked, the meat undone or the beans burned. Negro cooks were provided, but they soon fully demonstrated their absolute incompetency and having some grudge against the officers in charge they spoiled the fourth of July dinner, when special preparations had been made by mixing in a large quantity of kerosene, so that it was impossible to eat a mouthful. These were soon discharged and cooks appointed from the companies. These men, notwithstanding the new conditions, went to work with a will and, although the labor was continuous, managed to improve the conditions. There are many places more pleasant than the cooks' galley, when the ship is rolling and tossing, many times scalding water is dashed on the floors while the cook for self-preservation retires to the safety of the pantry shelves. The food itself was fairly good if properly prepared, but this, as can readily be seen by the surrounding conditions, was very uncertain. The bacon was very poor and in the cooking of it lost over one-half of its weight. The canned beef has such a disgusting look about it that the stomach rebels after a few meals. So it was that complaints came more from the lack of variety than from the quality of the food. The sloppy method of serving it I am sure also assisted in the at times repulsiveness of the food. Soon the cooks, by the assistance of details from the company to help in peeling potatoes, etc., presented the food in better form. The steerage deck was used for the sleeping quarters. The space was sectioned into bunks in tiers of three, thus bringing the top-most within a few inches of the upper deck, with the lowest almost upon the floor. They were made of wood and were simply oblong boxes, impossible to render clean by any method. Straw mattresses were placed in them, but this supposed comfort became a nuisance and even a menace to health, as they soon became rank, while the straw bunched up in the place least needed, the hips meeting the hard boards. The 6x2 foot bunk was the private's home, where he lived during the six weeks we were aboard the City of Para. Here he was placed with all his equipment, which took up more room and needed far more attention than he did himself. These bunks were provided with cans in case the owner became subject to the awful mal-de-mer, but the sea sick man could hardly direct the course of the ejection, the accumulation of San Francisco festivities, which was usually distributed to all the points of the compass, with the result that the sights and smells of the sleeping quarters during the first few days at sea, would cause reverse peristalsis in a cast iron stomach. Port holes were placed at regular intervals, but as the sea became rough these must be closed and ventilation depended upon the hatchways, and long canvas funnels reaching

high upon deck. This was satisfactory depending upon the velocity of the wind and the speed of the ship. The men near the chutes obtained air at times in such generous quantities that a diminution was desired, while those far away gasping for breath wanted more. The sleeping quarters were comparatively fair and as we had known no others were considered good. There were no transport officers provided as they are now and these positions were filled by men of our own regiment. We had no one to go to for advice and it was only through the excellent management and judgment of our commanding officer that we reached our destination with so few mishaps. The ship's officers had had as little experience in the handling of such a large body of men, and it was sometime after the sea calmed and permitted the responsible ones to be about that the routine ran smoothly. The ship's commissary was given a little salesroom, so hot that he found it necessary to bring only a day's supplies from the hold. Here he dispensed canned fruit, jams, ginger ale, tobacco, cigars and other truck to the men who had money left from the entertainment at San Francisco.

There were absolutely no arrangements made for hospital accommodations, and after much skirmishing with the other departments we obtained two small state rooms upon the port side of the upper deck, accommodating four men. Two other staterooms were closed and kept in reserve for any contagious diseases that might develop. Thus we started upon a six weeks' voyage with 1,000 men, with accommodations for eight sick men. The medicines were packed in boxes and placed in the hold, the supply for the medical chest in the dispensary being brought up as needed. The medicines were in pill and tablet form as there was little chance to compound prescriptions. Many pills of different medicines looked the same, for instance compound cathartic, camphor and opium, balsam copaiba were coated with black gelatine and it was to be expected that the men claimed that the same pill was given for every known disease. Sick call was responded to for the very slightest ailments. In seeing such a great number one soon thinks that by the face of the patient, the hurried feel of the pulse, the rambling story given, that a snap diagnosis can be easily made, but it needs only one lesson to bring the conscientious surgeon to a full realization of the fallacy of this idea. Yet the process must be resorted to in a certain degree. There was practically no sickness before reaching Honolulu, except two cases of typhoid fever from which others may have contracted the disease. They were left at Honolulu and proper steps at disinfection of the quarters taken, but notwithstanding this procedure twelve cases were in progress as we reached Cavite. Ice was at a great premium,

and hardly enough manufactured by the machines to keep the meats in condition. Only upon special order could this necessity be obtained. Special foods consisted of condensed milk and beef tea. The men nurses were conscientious and attentive to a last degree, but without experience and the treatment of the fever was beset with many troubles. The relief with which we forwarded these patients to the land hospital can well be imagined. The drinking water was made by a process of condensation and oftentimes was very warm and still retained the salty taste. At one time the engines were let down and the quantity to each man limited. Not the least of our duties was the inspection of the vessels which was done twice daily in company with the line officer of the day. Every part of the ship was thoroughly gone over and instructions given. How important this material cleanliness was can readily be understood when the crowded condition is remembered. While many things could have been improved upon, it was not because those in charge did not appreciate what was needed or know how to procure the essential but because under pressure many equipments and supplies were non-obtainable.

After a year of active campaigning upon Luzon orders came to board the Sheridan, one of the most modern of the transports. We found that this service had been made the earnest study of competent men and had been brought almost to a state of perfection. We found an army officer in charge as quartermaster and commissary. He had studied and arrived at definite conclusions upon berthing the men, and so accurate was his process that our whole regiment was quartered without confusion in one hour's time. He had a scheme for messing the men, having long folding tables which between meals hung in brackets prepared for them upon the walls. Great ranges and huge boilers in charge of competent cooks, prepared food in great abundance. The mess was much improved in every way, and what is a great point, properly served. Many extras were served, being brought from the ship's commissary, who had a large store from which he sold his goods. The sleeping quarters were much more commodious, while the beds consisted of hammocks tightly swung upon iron uprights and cross bars. The mess decks and sleeping decks were of iron, with rounded corners to prevent collection of dirt, and easily cleaned. Ice water was in abundance. Large closets and porcelain wash basins, shower baths and tubs were provided at each end of the boat. Far aft was the excellent little hospital in charge of a regularly appointed ship's surgeon. This contained 60 beds, with spring mattresses, sheets, pillow cases in sufficient quantity, a fine operating room and good supply of instruments, a dispensary where prescriptions of any nature

were put up by a competent steward, a diet kitchen where proper foods were prepared apart from general diet. It seemed that every branch of the service had been attended to with much wisdom and forethought with such good results and satisfaction that we can say that in our two trips across the Pacific we have seen the two extremes of transport service.

## AN INTRODUCTION TO THE STUDY OF THE SCIENTIFIC TREATMENT OF GONORRHOEAL URETHRITIS.\*

BY WILLIAM HUDSON PRIOLEAU, A. M., M. D.

New York City.

In offering gonorrhœal urethritis for your consideration and discussion, I have been actuated by the fact that relatively few physicians in general practice have had modern accepted ideas properly called to their attention. Moreover, the unjustly anomalous position in which the etiology of gonorrhœa and its treatment have been placed, has rendered the majority indifferent or hopeless regarding them.

Experience has awakened the desire to excite an interest in my subject; first by some statements which may appear startling, and secondly by showing how simple is the scientific treatment of this ever prevalent disease.

Those who are ignorant of the troubles that may arise from an uncured gonorrhœa are apt to treat the disease lightly, while those with a full knowledge of its possible consequences acknowledge that it merits the closest study.

Even before definitely determining to enter upon the exclusive specialty of genito-urinary diseases, I was struck by Oberlaender's statement that ninety per cent. of all diseases of the reproductive or urinary apparatus were due to gonorrhœal infection. Subsequent personal experience, covering about four thousand observations, convinces me that his estimate is below the real figures regarding gonorrhœa as a causative factor.

Literature shows that my experience differs in no way from that of other genito-urinary students. Physicians who graduated more than five years ago were ill prepared to battle with this most prevalent disease; even now some of our leading colleges graduate men when their knowledge of gonorrhœa is probably nil. This appears to explain the large army of sufferers from the sequelæ of gonorrhœal urethritis.

Not only is the genito-urinary specialist kept busy from the consequences of gonorrhœa; but this will be saliently evident when omitting the genito-urinary apparatus we consider the other organs that can be and are invaded by the gonococcus of Neisser. The specialist in diseases of the eye has no more destructive inflammation to contend with than gonorrhœal ophthalmia. The statistics of Germany show that eighty per cent. of those blind who were born with healthy eyes lost their sight through ophthalmia neonatorum due to gonorrhœal infection.

I have chosen the German statistics because they are more carefully made than those of any other country. I have no doubt that they are correct and would not differ from statistics in America if such were obtainable.

The surgeon will at once recall some of his most painful cases when he remembers the sufferings caused by gonorrhœal urethritis. He also knows how difficult these cases are to cure.

To the specialists in all branches of medicine and to the general practitioner, gonorrhœa follows a definite and fixed rule. Lastly, and certainly not less important, the gynæcologist who daily removes tubes, ovaries and even uteri for some pus infection, finds as Noeggerath, of New York, presaged over thirty-two years ago, that gonorrhœa is in most of these cases the causative factor of the unsexing disease.

Only exceptionally is the woman culpable; nor is the husband always to be blamed, for he is often the innocent cause; but on the doctor, the friend of the family and their medical adviser, should the odium rest; because of ignorance or narrow-mindedness on his part, many a wife is unsexed and many a child lost forever to God's light of day. This is not an arraignment of the profession, it comes as the result of an experience which must reach every one, no matter how recent or how little is his special experience.

Today, in the light of our better pathology and improved treatment, we realize that we have a common disease with a common interest to deal with, and it is to the treatment of this disease that I request your special attention.

What I may not be criticized for calling the scientific treatment, is the irrigation treatment as popularised by Janet, of Paris, and perfected by Valentine, of New York. I omit the large array of other workers, so as not to encumber my paper with names that have enriched the literature of the subject.

The instrument which I take pleasure in showing is the Valentine irrigator. The one he recommends is made by Tiemann & Co., of New York. It consists of a percolator, in a collar, sliding on a fixed rod; to this percolator is attached a rubber tube. The fore end of the rubber tube

\*Abstract of a paper read before the South Carolina Medical Society.

passes through a stop cock and has an appropriate nozzle inserted into its termination. A complete description of this irrigator is found in an article by Dr. Valentine, published in the International Journal of Surgery, September, 1898. The irrigator is so arranged that the percolator can be raised or lowered at will, and the stop-cock is so constructed that a minimum or maximum force can be obtained as desired by mere flexion or extension of the thumb. The nozzles are of different shapes so as to fit a large or small meatus. The solution most used in our clinic and private office is permanganate of potassium, varying in strength from 1-12000 to 1-2500 solution. The formulæ found serviceable in acute gonorrhœa are:

#### FOR ACUTE GONORRHŒA

First day, first visit. . . . .	Anterior irrigation	1-3000
First day, 7 p. m. . . . .	Anterior irrigation	1-4000
Second day, 9 a. m. . . . .	Anterior irrigation	1-3000
Second day, 7 p. m. . . . .	Anterior irrigation	1-4000
Third day, 9 a. m. . . . .	Intravesical irrigation	1-6000
Third day, 7 p. m. . . . .	Anterior irrigation	1-5000
Fourth day, 9 a. m. . . . .	Intravesical irrigation	1-5000
Fourth day, 7 p. m. . . . .	Intravesical irrigation	1-5000
	Anterior irrigation	1-2000
Fifth day, noon. . . . .	Intravesical irrigation	1-5000
Sixth day, noon. . . . .	Intravesical irrigation	1-5000
Seventh day, noon . . . . .	Intravesical irrigation	1-5000
Eighth day, 9 a. m. . . . .	Intravesical irrigation	1-5000
	Anterior irrigation	1-3000
Eighth day, 7 p. m. . . . .	Intravesical irrigation	1-5000
	Anterior irrigation	1-2000
Ninth day, 9 a. m. . . . .	Intravesical irrigation	1-4000
	Anterior irrigation	1-1000
Ninth day, 7 p. m. . . . .	Intravesical irrigation	1-4000
	Anterior irrigation	1-1000
Tenth day, 9 a. m. . . . .	Intravesical irrigation	1-4000
	Anterior irrigation	1-1000
Tenth day, 7 p. m. . . . .	Intravesical irrigation	1-5000
	Anterior irrigation	1-500

I have given the ten days' treatment which we endeavor to follow as nearly as possible in every acute case. Some cases will demand milder solutions, so each case is a study in itself and the above formulæ must be varied accordingly. Then, too, it sometimes happens that an apparently simple case will not yield to treatment as promptly as might be expected; such cases, as a rule, are mixed infections, and by adding a weak solution of bichloride of mercury, 1-50000, will rapidly improve. This premises that the adnexa

to the urethra are not severely involved. The results from such treatment are evident from Goldberg's figures, who collated his statistics from the work of all writers on the subject, whether they approved or disapproved of the irrigation treatment.

"Sixty per cent. of gonorrhœas treated by irrigation alone recovered in ten days; thirty per cent. of gonorrhœas treated by irrigation alone recovered in fourteen days; five per cent. of gonorrhœas treated by irrigation required more than two weeks, because of violation of injunctions against coitus, alcohol, etc., and five per cent. stand recorded as failures."

Should a case not be cured in ten days then it is advisable to continue your treatment by a resumption of the ten days' formulæ.

There is one point of importance which if neglected frequently will bring on a recurrence or prevent a case from being cured; that is, auto-reinfection. To prevent this, instruct your patient in cleanliness and tell him to apply a piece of absorbent cotton soaked in 1-6000 corrosive sublimate solution to the meatus after each urination, and to keep it there until he is called upon to urinate again, when he must remove it and apply a fresh piece. This cotton should be burned or otherwise destroyed when removed. By all means avoid bags and condoms for collecting the discharge; they are abominable inventions and can do only harm. There is no internal medication of value in gonorrhœa, but occasionally in a severe posterior urethritis santal oil proves useful as it is a genito-urinary anodyne.

The directions to a patient are few and simple. He is told to drink freely of pure water and to abstain from all alcoholic liquors and carbonated waters. Soft drinks as they are called are genito-urinary irritants. So much for acute gonorrhœal urethritis.

In chronic gonorrhœal urethritis a second element as a rule enters into consideration. This must be attended to before the gonorrhœa can be cured. As a frequent cause of chronic gonorrhœal urethritis, we have a small meatus, a tight posterior boundary of the fossa navicularis, an enlarged crypt, gland or follicle or an involved prostate or seminal vesicles. The irrigation treatment of an uncomplicated gonorrhœal urethritis is according to the following formula:

First day, first visit	Anterior irrigation	1-3000
First day, 7 p. m. . . . .	Anterior irrigation	1-6000
Second day, 9 a. m. . . . .	Intravesical irrigation	1-4000
Second day, 7 p. m. . . . .	Anterior irrigation	1-4000
Third day, 7 p. m. . . . .	Anterior irrigation	1-2000
Fourth day, 9 a. m. . . . .	Intravesical irrigation	1-3000
Fourth day, 7 p. m. . . . .	Anterior Irrigation	1-200
Fifth day, 7 p. m. . . . .		
	Intravesical irrigation	1-3000
	Anterior irrigation	1-1000

Sixth day, 7 p. m. . . . .	Anterior irrigation	1-1000
Seventh day, 7 p. m. . . . .	Anterior irrigation	1-1000
Eighth day, 7 p. m. . . . .		
	Intravesical irrigation	1-3000
	Anterior irrigation	1-1000

The subject of the treatment of chronic gonorrhœal urethritis, when complicated, is too large to discuss in this paper, but when the complication is due to a dilatable stricture then you will find that dilatations accompanied by irrigations are of most value. I do not mean by dilatation the simply passing of a sound, but I mean dilatations performed by Oberlaender and Kollmann dilators. These instruments by their pressure perform massage of the stricture and in so doing cause absorption of the infiltration. These dilators are so arranged that you can enter a small meatus with an Oberlaender and a large one with a Kollmann. Also you have separate instruments for the anterior urethra, for the posterior urethra and a combined one for both the anterior and posterior when there is an involvement of both. To insert these instruments, dip the end into talcum and take up as much on the tip as possible, then twist the rubber cover on; now dilate the instrument violently so as to see if there be any defect in the rubber cover; if there be none then turn the instrument down, lubricate it thoroughly and gently insert it into the urethra. For lubricating it I can advise lubri-chondrin, a preparation of Irish moss. This was first used in urethral work by Prof. Valentine, and I know of nothing so satisfactory. In removing the instrument from the urethra be as gentle as you were in inserting it. Turn it down gently and then turn it up one-half a number and withdraw. By turning it up you will release any fold of mucous membrane which may have been caught in the instrument when it was closed. There are a few minor but nevertheless important points to be remembered in connection with dilatations; first, always have your patient urinate after a dilatation and then irrigate him, thus avoiding catheter fever. This applies to any instrumentation of the urethra or bladder; second, have your patient wear absorbent cotton soaked in bichloride solution as long as there is any discharge from the urethra.

In this paper I have demonstrated the Valentine irrigator and I have explained the irrigation treatment. To sum up and to draw conclusions, I would say that the advantages of this treatment are:

1. It takes less time than any other method to effect a cure.
2. It offers a means of washing out the urethra and bladder without inserting an instrument into either.
3. It is inexpensive and simple.

There are about one hundred and thirty thousand physicians in the United States and Canada;

of this number six thousand have been induced to use the irrigation treatment. Some will report that complications have arisen from its use. Such has not been my experience, nor has it ever been the experience of those using the apparatus correctly. The bladder cannot be entered by force; attempts to do so are most likely to produce at least a severe epididymitis. The urethra is a delicate canal and must receive as gentle treatment as the eye. You have seen the irrigator, and my purpose of coming before you today is to induce you to use it in your practice for the benefit of those who otherwise are likely to enter upon a life-time of suffering.

You might ask when one is certain that a cure has been affected.

When:

1. The normal urethral mucus shows no gonococci.
2. After the use of a genito-urinary irritant the excess produced shows no gonococci.
3. A condom specimen contains no gonococci.
4. An examination of the urine shows it to be free from shreds, filaments, flakes and granules.
5. The expressed contents of the prostate and seminal vessels are free from infection.

6. The urethroscope shows a healthy urethra.

These are the important points in deciding a cure; no one is certain of itself, but taken together and giving a negative result prove that the case has been cured.

In the beginning of my article I alluded to the importance of gonorrhœa and to the criminal indifference with which it is treated. The responsibility of a physician in a case of gonorrhœa is great; he should not only accept every case that comes in his office, but he should give it his special attention. Should a case be refused by any one of you, the patient will seek advice from one less capable and less honest. No physician has a right to treat indifferently any case of gonorrhœa. He should always remember that other lives are at stake besides that of his patient. If only sufficient attention is paid to the case to stop the discharge, then an uncured gonorrhœa is likely to remain. In after years, because of this uncured gonorrhœa, his wife may become infected and thence also the eyes of the new born baby.

In concluding I want to thank you for your attention and to emphasize three points:

1. That few cases of gonorrhœa should go beyond the acute stage.
2. That the disease belongs to the general practitioner.
3. That more cases are rapidly cured, more complications prevented and more women and children saved from infection since the irrigation treatment has become understood by the profession.

## DIFFICULT POINTS IN GYNÆCOLOGICAL DIAGNOSIS.\*

BY WILMER KRUSE, M. D.

Philadelphia, Pa.

It has been well said that "science knows nothing of nationality," and we rejoice in additions to our knowledge, and to our power of combating disease and death, whether they come to us from a French Pasteur, a Teuton Koch, or an Anglo-Saxon Lister; yet we as Americans can but feel a natural and pardonable thrill of pride in the fact that so many names of our compatriots are written on the page of gynæcologic history. The great impulse which abdominal surgery received when it found that ovarian cysts of a formidable character could be successfully removed by an Ephraim McDowell in the backwoods of Kentucky, marked a new era in the progress of gynæcology; and the peculiar technical genius of Marion Sims, which led to the invention of the perineal retractor that bears his name and aided him in achieving success in the relief of the then almost incurable lesion, vesico-vaginal fistula, brought incalculable benefit to woman-kind, not only in the treatment of fistula, but in the diagnosis and treatment of all diseases peculiar to women. And to this list may be added the honored names of Emmet, Battey, Goodell—the first professor of gynæcology in this country—and a score of others who have aided vastly in advancing their special departments of medical science and, at the same time, added new lustre to American surgery.

"Diagnosis," says DaCosta, "is partly a science, partly an art; a science because it comprehensively takes account of facts; an art because it demands a cognizance of the means and their application to arrive at the desired result." The successful gynæcologist must be a student thoroughly familiar with his science, and then by the application of his art, strive to reach a correct conclusion. In no department of medicine are we able to depend less on the symptomatology of the case than in gynæcology. As Mundé has said, "In no other part of the body is the recognition of the more complex forms of disease more difficult and confusing than in the female pelvis and abdomen with, perhaps, the sole exception of the brain." The necessity for the "tactus eruditus," which can only be acquired by repeated examinations and thorough training, is always evident. We find repeatedly similarity of symptoms with dissimilarity of causes and conditions. The case-book of the gynæcologist often repeats itself page after page. The same train of subjective symptoms, backache, dragging sensation, disturbed menstrual function, increased

discharge, etc.—characteristic uterine syndrome—may be found in either uterine, tubal or ovarian disease; so that nothing but the careful, systematic abdominal, vaginal, rectal, or vesical examination will elucidate the condition and enable us to solve the mystery of etiology. The various conjoined or bi-manual methods of indispensable.

When the history of a case indicates clearly or possibly the presence of some pelvic lesion, local examination should be advised, the necessity for it being carefully explained to the patient. If she is not willing to permit such an investigation, then it is better for the physician to refuse to prescribe, grimly declining to be responsible, as any attempt to treat such a patient empirically will usually result in failure; both physician and patient will be disappointed, and the latter often progress into an aggravated or incurable state which will render even radical treatment imperative, ineffectual or impossible. Then she and her friends will most certainly condemn the physician for not insisting upon the desired examination. In making this examination the administration of an anæsthetic is often indispensable; and no positive diagnosis in an obscure case should be made without its employment.

It may seem unnecessary in this connection to call attention first to pregnancy and its early recognition; but the fact remains that the uterus is sometimes explored and curetted, or the abdomen opened in cases in which the increase in size in uterus and abdomen is due to a physiologic, and not a pathologic condition. Each case must be studied without "prejudgment," and our opinion must not be biased by the social position, reputation and circumstances of the party concerned. If it is the design of the patient to deceive us, all the more carefully must we conduct our examination and consider our judgment before giving a decision. Time is the important factor in obscure cases, and will soon deny or confirm our opinion by a certain and remorseless revelation of facts. The presumptive signs of pregnancy should be carefully studied and its possibility considered in every instance.

The early recognition of carcinoma of the uterus as absolutely essential to its successful treatment. Unfortunately we have no pathognomic signs of the dread disease. It is frightfully prevalent and the results of treatment morosely unsatisfactory. Its onset is so insidious that eternal vigilance is the price of its diagnosis. After it is once established unmistakably, its extension by continuity of tissues, through the venous and lymphatic systems is so definite and direct, that surgery is powerless to eradicate and medicine helpless to alleviate. How often like Hippocrates we find in these cases experience fallacious and judgment difficult. The cervix uteri in suspicious cases, subjected as it is to the "brunt of the insults of coition and par-

\*Abstract of a paper read before the Medical Society of the State of West Virginia.

turetion," should be watched with untiring assiduity; and when palliative treatment fails to alleviate speedily, corroborative microscopic examination should be employed, and if confirmatory evidence is secured, complete hysterectomy should be performed. Would that I possessed that ancient and resistless eloquence to wield men to realize the vital necessity of early recognition and treatment of uterine cancer. The dispensaries of our large cities and the offices of specialists are, over and over, the scenes of the sad astonishment of the patient and impotent commiseration of the physician as he tells the poor sufferer, or her friends, that the case is incurable. There is nothing in the early symptoms of uterine carcinoma to interfere in the slightest degree with the ordinary course of life; and even if the woman's attention is attracted to certain trifling symptoms, her fears are not excited and her physician not consulted. All cases of hemorrhage, either slight or profuse, occurring after the menopause should be regarded with suspicion, and the cause of bleeding ascertained. After the malignant disease is once established, its diagnosis is one of the easiest of case problems to solve; but in its first stages it may be mistaken for laceration of the cervix with ectropion, ulceration, or erosion; and the necrosis of a fibroid polyp with partial expulsion from the external os has repeatedly been mistaken for malignancy of the cervix or body of the uterus. Syphilitic lesions of the vaginal portions of the uterus, although one of the rarest of conditions, must be remembered. Condylomata filling the vagina resemble cauliflower excrescences and must be differentiated. The fact that a specific history may be obtained in many cases of well-defined epithelioma increases the difficulty in differentiation. Although the microscope gives valuable information in regard to these conditions, unfortunately it requires special knowledge of the methods of obtaining and preparing tissues for microscopic investigation, which the majority of us do not possess. And even if the practitioner possesses the needful knowledge the amount of time required greatly diminishes its value. What is needed most is an easily applied clinical method of diagnosis. The chief symptoms of carcinoma are hemorrhage, watery or purulent discharges, and pain; but these occur so irregularly that many cases may present only one of the trio before extensive invasion has occurred. To aid in the early diagnosis of this dread disease the following points may be of value, although all may not be applicable to every case:

1. That unusual friability and vascularity of the tissue which if not detected by the finger may be easily made apparent by hooking a tenaculum into the suspected area. The tenaculum will immediately tear out and cause abundant bleeding from the carcinomatous tissue.

2. A close adhesion of the mucous membrane of the portio to the parenchyma.

3. The difficulty in cervical dilation as evidenced by the introduction of a tent. In a cancerous process there is, as a rule, a continuance of the hardness after dilation.

4. Bleeding is easily provoked by an examination or by any unusual exertion or manipulation.

5. The characteristic induration of the cervix, almost imperceptible at first, but increasing as the disease progresses.

6. Puncture of any suspected nodules or follicles will differentiate between cystic follicles, distended glands and carcinoma.

7. Ulcerated or eroded areas which are not speedily amenable to treatment should be regarded with suspicion.

8. Any enlargement of the uterus occurring after the menopause is usually due to malignant disease. (Fisher.)

9. An early diagnosis can only be made with absolute certainty by microscopic examination of either an excised wedge from the suspected cervix or, in cancer of the body, of portions of the endometrium removed by curettage. The value of the examination will depend upon the experience and competency of the pathologist.

Epithelioma of the vulva is less frequent than malignant disease of the uterus and may originate in a hard, ulcerated and fungous plate between the labia minora and majora, from which it extends to the vestibule and destroys the vulva and urethra; or it may show itself first in the region of the urethra, forming around its external orifice a hard, vegetating ulcer, giving the finger the sensation of a tube of pasteboard, and soon with the near tissues becoming soldered, as it were, to the adjacent bony walls; or it may begin upon the clitoris, forming there a mass and then spreading to the anterior portion of the vulva towards the mons veneris, being accompanied by sharp pains radiating through all the pelvis. Duret claims that this form of cancer is often preceded either by kraurosis or leucoplakia of the vulva. Kraurosis of the vulva is a singular malady leading to a general shrinkage of all parts of the external genitalia. In vulvar leucoplakia, whitened plates appear upon the labia, the vaginal walls, the neck of the uterus, and the interior of the urethra, being peculiar to the mucous membrane. At first, opalescent and scattered, these may increase until they entirely cover the vulva and vagina, and, gradually thickening, seem in places like a porcelain covering of the vulva. There is an excessive keratinization of the epidermis in certain areas in which in fact originates the transformation into epithelioma. These whitened, horny plates may remain without transformation ten or fifteen months, or even longer.

In regard to the diagnosis of epithelioma, it is liable to be confounded, (1) with simple vegetations, (2) with lupus of the vulva, and (3) with syphilitic affections; but the first, the simple vegetations, secrete a virulent liquid unlike the ichor of cancer, they readily yield to an energetic caustic which prevents their reproduction, and they have no hardened base, being remarkable for their softness. In the case of lupus, the vulva is red and presents scattered fungous ulcerations which are without any indurated base; while the syphilitic chancre is more limited and has a little circle of characteristic induration.

After malignant disease, the recognition of ectopic gestation ranks next in importance; for the high mortality attending the intra-abdominal rupture of the gestation sac, if operation is not speedily performed, makes early diagnosis imperative. Every instance of ectopic gestation should be treated as a case of malignant disease and operation performed as soon as recognized. The life of the patient is in jeopardy and the hazard is too great to permit dilatory treatment. The two conditions most liable to be mistaken for extrauterine gestation are incomplete abortion and disease of the appendages of one side. A pyo- or hydro-salpinx resembles closely early tubal pregnancy. A study of the objective signs in conjunction with the history is important. The increased size of the uterus, the mass situated at one side of that organ, the pulsations of vessels in the lateral fornix, the expulsion of the decidual cast from the uterus and microscopic examination of it when possible, together with a history of previous sterility and unusual discomfort during this pregnancy, with cessation of menstruation, are significant of ectopic gestation. Few possess the diagnostic acumen of Spencer Wells, who made the diagnosis of simultaneous intrauterine and extrauterine pregnancy. In one case operated on by Montgomery during the past winter at Jefferson Hospital, the extrauterine pregnancy had occurred for the second time in the same woman, the remaining tube being the seat of the pregnancy, an unsuspected condition which tested the ability of the diagnostician.

Another interesting point in gynecologic diagnosis is the differentiation of appendicitis from pyo-salpinx or ovarian disease. The co-existence of appendicitis with disease of the adnexa is so frequent that sometimes the accuracy of the diagnosis is interfered with, and it is impossible to say whether the symptoms are primarily due to the appendix or the appendage. In appendicitis there are three cardinal symptoms, pain, rigidity and tenderness. The pain is most frequently referred to the umbilicus or the periumbilical region; next in order of frequency, to the epigastrium; and last of all to the region of the appendix; and the point of greatest intensity of tenderness is directly over the inflamed

appendix; while in the purulent affection of tube or ovary, there is the possible history of a vaginouterine infection, disturbance of uterine function, and the intimate relation of the inflammatory mass with the uterus demonstrable by a careful recto-abdominal or vagino-abdominal examination. The swelling of an appendicitis will not ordinarily be mistaken for a salpingitis, since the former can rarely be palpated from the vagina unless the appendix be displaced or the exudate fills the pelvis; whereas the diseased tube usually forms a conglomerate mass with the ovary and uterus and does not extend into the supra-iliac region. Yet in fact so frequently are the two conditions associated that one is almost tempted to formulate a general rule and remove the appendix whenever celiotomy has to be performed for pelvic disease.

It has been my experience recently during the frightful epidemic of enteric fever which has disgraced the fair municipality of Philadelphia, to observe four cases of pregnancy complicated by this fever, in all of which either abortion or premature labor was the result. Although the elevation of temperature continuing after the miscarriage or labor is very liable to be attributed to sepsis, particularly in those cases in which the first call to the physician and the first recorded temperature were at the time of the expulsion of the fetus, yet the characteristic temperature, the comparatively slow pulse, the abdominal symptoms with the relative corroborative value of the Widal test, all pointed to the diagnosis of enteric fever. An offensive vaginal discharge was present in two cases, and in a third staphylococci were found. These conditions made the cases perplexing until further study revealed their true nature.

Time will not permit a detailed account of more of the knotty problems which tax our diagnostic acumen; suffice it to say that many mistakes are due, not to the ignorance of the physician, but to the fact that sufficient time and thought are not given, nor all available clinical methods and instruments employed in studying the individual case. Osler, in his admirable lectures on the diagnosis of abdominal tumors, has observed that "Bishop Butler's maxim that 'probability is the rule of life' is particularly true, and the cocksureness of the clinical physician, who formerly had to dread only the mortifying disclosures of the post-mortem room, is now wisely tempered when the surgeon can so promptly and safely decide upon the nature of an obscure case." It is only by a frank confession and careful record of our mistakes that we may prevent our professional brothers from making similar errors, and by patient effort and constant observation that we may diminish human suffering and add to the grand sum total of useful medical knowledge.



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**RECENT DECISIONS UPON THE MINNESOTA MEDICAL PRACTICE ACT.**

No apology is necessary for the frequency with which reference is made in these columns to the matter of medical legislation in Minnesota. It is by far the most important topic before the profession at the present time, and it is clear that whatever action is to be taken must come next year when the legislature meets, for there is no doubt that then there will be a gathering of the clans of osteopathy, Christian science and other forms of popular delusion, to obtain legislation that shall let down the bars against quackery and humbug and leave the people of the state once more at the mercy of any medical pretender who may come along. With this prospect before it now is the time for the medical profession to plan out its work for the future, to examine the medical laws of the past and present in order that in preparing a law for the future, while holding fast to the good things that have been already enacted, it may avoid past mistakes.

The study of medical legislation in Minnesota has been materially aided by two recent judicial decisions, construing the law as it stands and helping to straighten out the somewhat tangled meshes of the law through which one or two fish have succeeded in slipping after they had once been fairly caught. The decisions referred to were given in the case of the State vs. N. T. Gassaway, who was arrested and brought before the municipal court of St. Paul in June last on

the charge of practising medicine without a license. The suit was a friendly one for the purpose of testing the law, and the facts were admitted that Gassaway had practised medicine in the state within the meaning of the statute and that he had no license. The defense was that Gassaway had filed with the secretary of the state board of medical examiners an affidavit setting forth that he had been engaged in the practice of medicine in St. Paul from March to April, 1895.

To understand the nature of this defense and the points brought out in the decision of the court it is necessary to go over the history of medical legislation in Minnesota. The first act for the purpose of regulating the practice of medicine in this state is that of 1883, making three classes of those that might legally practise viz: those holding diplomas satisfactory to the state board of medical examiners and having them properly registered; those passing an examination before the board; those who had practised medicine within the state for five years before the passage of the act. This act was repealed in 1887 and for it was substituted a law requiring that all persons commencing the practice of medicine should apply to the board for a license and submit to an examination. In 1895 the act of 1887 was amended, making it unlawful for any person to practise medicine without a license from the board of medical examiners or "without having filed with the secretary of said board an affidavit setting forth the times and places in which he or she has practised medicine within this state prior to the passage of this law," etc. The part in quotation marks is the particular stumbling block of the present law, and in the case of Gassaway it was attempted to find out how the courts would construe the provision as to the filing of an affidavit, which, if taken literally, would appear to admit to practice any one willing to swear that he had practised medicine in Minnesota prior to April, 1895, to require of him no license and to make it impossible to prevent him from practising in Minnesota except by proving that his affidavit was false.

The judge of the municipal court of St. Paul says that from a study of all the medical legislation of Minnesota it seems to him that the law having originally exempted those who had been in practice five years prior to the passage of the

law of 1883, wished by its later legislation to continue that exemption and that it had this object in view in passing the amendment of 1895. The judge points out that the defendant, Gassaway, practising medicine as he claims to have done in March, 1895, while the law of 1887 was in force, was doing so in violation of the statute and that "he (the judge) cannot conceive it possible that there was any intention in mind in enacting the amendment (of 1895), to free men who were then violating the law, and allow them to use their own wrong doing as a basis and justification for becoming lawful practitioners by so simple a method as filing an affidavit setting forth their own transgressions." The judge further says that it seems to him no strained interpretation of the intention of the legislature to suppose that it meant when an affidavit was filed that the affidavit should set forth the times and places where he had legally practised medicine, and that only such legal practice was intended to be the basis of permission to continue. "There are," said the judge, "many people who could truthfully make as full an affidavit as that of the defendant in this case, from the man or woman who advises his neighbor or friend what to do for a cold or headache, to the person who claims by invocation to cure disease, or the person who claims by some undisclosed concoction to relieve all ills, or the person who standing in a wagon on a street corner in the glare of a gasoline lamp and accompanied by a colored minstrel claims to remove excrescences or to perform other operations. We then have the absurd conclusion, if the defendant's contention is correct, that all persons practically may make affidavit and practise medicine, the incompetent and unfit persons being free from supervision, while the capable, trained medical man is subject to strict discipline by the board. I do not think such a contention can prevail."

To test the matter further the defendant was committed to jail to await the action of the grand jury and was then brought before the district court of Ramsey County under a writ of habeas corpus. The judge of the district court dismissed the writ and ordered the defendant back into the custody of the sheriff, on the same grounds taken by the judge of the municipal court, that is that the illegal practice of medicine could not be made the basis of a claim for

legal recognition, and further that the spirit of the act showed the intention to require something more than the mere filing of an affidavit. It must be a sufficient affidavit and it was evidently intended to be one that was satisfactory to the board of examiners with whom it was provided that it should be filed. In the language of the court: "The far import of the law is, first, that the affidavit shall be one of substance, disclosing on its face professional conduct on the part of the applicant in conformity with law, and, second, that the affidavit shall be filed with the Secretary of the Board for approval by the Board, without which the applicant is barred from practice."

As far as the matter has gone the courts have shown a disposition to put the most liberal interpretation upon the law as intended for the protection of the people against quackery and imposture. It must not be forgotten, however, that no court of last resort has as yet given its opinion, and it will be much safer to have the question of who shall be allowed to practise rest upon a properly worded law than upon the favorable construction of a badly worded statute.

## BOOK NOTICES.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George Frank Butler, Ph. G., M. D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, Medical Department of the University of Illinois, etc. Third Edition, Thoroughly Revised. Philadelphia: W. B. Saunders, 1899. [Price, in Cloth, \$4.00.]

The first edition of this book appeared but three years ago and received a full notice in these columns, a notice that will apply equally well to the present edition. The fact that a new edition is called for every year in itself speaks volumes for the popularity and success of the book.

The medicinal substances treated of are grouped according to their action, thus making it easy to compare a drug with its congeners. To offset this arrangement as compared with a book arranged alphabetically there is a very complete index, in fact two of them, one general and one clinical. An excellent feature is the description in the text of many unofficial as well as all official preparations.

The Medical News Visiting List, 1900. Philadelphia and New York: Lea Brothers & Co. 1899. [Price \$1.25].

This popular visiting list, beside its well arranged daily record of professional work, con-

tains much valuable information that the medical man will often be glad to have in his pocket. Worthy of particular mention in this regard are the table of incompatibles, the directions for performing artificial respiration, the list of poisons and antidotes, the table of doses of medicines most frequently used and the therapeutic reminders. The book is of convenient size, handsomely bound in seal grain leather, and may be had furnished with a thumb index.

The American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A. M., M. D., Assistant Obstetrician to the Hospital of the University of Pennsylvania, etc. Second Edition, Revised. Philadelphia: W. B. Saunders. 1899. [Price, \$1.25].

The revised edition contains the correction of many errors that unavoidably crept into the original edition of his work. It is a wonder that 26,000 words and their definitions can be put into the small space included between the covers of this work. Yet the definitions are by no means scrimped nor is the type microscopic, but on the contrary, both are clear and intelligible.

Notes on the Modern Treatment of Fractures. By John B. Roberts, A. M., M. D., Professor of Surgery in the Philadelphia Polyclinic, etc. Illustrated. New York: D. Appleton and Company. 1899. [Price, \$1.50. For sale by the St. Paul Book and Stationery Co.].

The nineteen essays which go to make up this little book contain an astonishing amount of sound observation and advice that cannot fail to interest and instruct the reader. Although some of Dr. Robert's doctrines may sound overbold, as his advocacy of the rather free resort to incision upon closed fractures and his statement that most cases of Colles' fracture need no splint, nevertheless the book is one which no one can read without profit, and which should be in the hands of every general practitioner.

Annual and Analytical Cyclopædia of Practical Medicine. By Charles E. De M. Sajous, M. D., and One Hundred Associate Editors. Illustrated. Volume IV. Philadelphia, New York, Chicago: The F. A. Davis Company. 1899.

The fourth volume carries the Cyclopædia from "Diarrhoeal Diseases of Infants" to "Mercury." Between these topics may be found many important and valuable articles, among which may be mentioned "Influenza," "Insanity," "Intestines" and their diseases, "Iodine," "Iron," "Joints" and their diseases, "Laryngitis," "Leptosy," "Leukæmia," "Diseases of the Liver," "Locomotor Ataxia," "Malaria," "Measles," "Meningitis" and the "Menopause."

## MISCELLANY.

### THE DECEMBER MAGAZINES.

The Atlantic has a brilliant table of contents opening with an article of great interest to all readers. It is the English side of the South African question, the "Briton and the Boer," presented by Alleyne Ireland, who, however, is not blind to the gross blunders of Mr. Chamberlain, who forced the war upon Kruger. This article, and one on the other side by Karl Blind in the Fortnightly Review, reprinted in the Living Age of Dec. 2, present the question so clearly and forcibly that one need not look further for the causes that have brought about this unfortunate war, which is a disgrace to both sides engaged in it.

Jacob A. Ries writes on "Reform by Humane Touch," and we do not believe one can find in any book or magazine a better presentation of the subject of corruption in politics. He shows what the political boss is and how, yes, only how, his influence can be overcome. This he does only incidentally, but it is none the less clear. His article is a splendid appeal to the citizen to do his duty. Hamilton W. Mabie writes of Edgar Allen Poe, whom he shows to be the most distinctive and individual American writer. Of the score of articles in this issue not one is inferior to the three above mentioned, which is very high praise indeed. It is pleasant to know that our excellent popular magazines have not gained their large list of readers at the expense of a magazine of so high standing as the Atlantic; for we are informed that the number of readers of the Atlantic was never so large. We congratulate these readers.

The Review of Reviews opens with a discussion of the recent elections in their bearing upon the president's policy, and the editor further discusses the campaigns in the Philippines and in South Africa. But Dr. Shaw's "The School City—A Method of Pupil Self-Government" is one of the best of his many excellent contributions on the practical problems of citizenship. Horace B. Hudson, of Minneapolis, writes entertainingly of the movement to establish a national sanitarium in the forests of Minnesota, in which the medical profession is particularly interested. Many more good things appear in this issue.

The new Lippincott is a fiction number of great interest, and in addition to its complete novel, "The Whistling Maid," by Ewart Rhys, it has a short story—and a good one, by Howells and a poem by Edward Markham, and it is real poetry. But our readers will be especially interested in "Washington's Death and his Doc-

tors," by Dr. Solomon S. Cohen, who shows how foolish it is to blame Washington's physicians for his apparently untimely death.

Lippincott has made such marked progress during the current year as to place it among the best of our popular monthlies.

Scribner's is a Christmas number of great beauty of illustration and richness of contents. The color work is exceedingly rich and artistic, and gives great promise for the new year. Short stories almost fill the issue, but there is room left for such valuable things as "John Wesley," "American Seamen in the Antarctic," "The Possibilities of Antarctic Exploration" and some excellent poems. Gibson's "The Seven Ages of American Women" is perhaps the best thing in the magazines of the month. The pictures are printed on a fixed background, after the manner of old engravings, and they are very beautiful.

The Outlook gives its readers an annual book number the first of December and the current issue is the seventh in the series. It gives a careful and a really valuable survey of the literature of the season, together with a number of excellent contributions on literary subjects, such as "Biography and History" by Alfred Hadder; "In the Field of Fiction," by one of the magazine's editors; "Books and Art," by James McArthur; "A Group of Young Illustrators," by E. D. North; and "Weinar and Goethe," by Hamilton W. Mabie. Other excellent articles appear in the number, which is an especially readable one.

#### The Youth's Companion.

In choosing a Christmas gift for a friend what can afford more present or lasting pleasure than a subscription to The Youth's Companion? The delight with which it is welcomed on Christmas morning is renewed every week in the year. The charm of it is disclosed little by little as the months run their course. There is no household in which it will not prove an inspiration.

Those who wish to present a year's subscription to a friend may also have the beautiful new Companion Calendar for 1900 sent with it. This Calendar is a reproduction in twelve color printings of three exquisite designs by a celebrated American artist, a member of the American Water-Color Society. In addition to this all the issues of The Companion for the remaining weeks of 1899 are sent free from the time subscription is received for the new volume.

Illustrated Announcement Number containing a full prospectus of the volume for 1900 sent free to any address by The Youth's Companion, Boston, Mass.

#### HAY FEVER AND ACUTE CORYZA.

Dr. B. J. Wetherby, of Wilkesbarre (Medical Council, November, '99), calls attention to a new and very serviceable application of heroin; namely, its use in the treatment of hay fever and coryza. In these conditions he recommends the following formula:

Heroin, 1 grain.

Atropiæ Sulph., 1-25 grain.

Caffeine Cit., 15 grains.

Salophen, 75 grains.

M. Ft. Caps. No. XV.

In the author's own case of hay fever one capsule was sufficient to relieve the sneezing and the profuse nasal secretion; and four capsules a day kept him perfectly comfortable. Since this favorable experience Dr. Wetherby has prescribed the same treatment in a number of cases of coryza and hay fever with equally positive results in every instance. He believes that by its use we can promise immediate relief to the large army of coryza patients so common at this season of atmospheric changes.

From the address of T. T. Earle, M. D., President of the South Carolina Medical Association: Our war with Spain has increased our knowledge of the effects of modern small calibre bullets. The X-rays were of great value to us. Dr. William Gray, the microscopist of the Medical Museum, at Washington, who was detailed by that institution for surgical work in the past war, with special reference to the diagnosis of gunshot wounds by the Roentgen rays, in giving the result of his observations, says: "We took out bullets by the pint on board of the 'Relief,' and almost without exception they were located by the X-rays. It is all done in a few moments; five seconds for a wound in the hand, thirty seconds for one in the foot, and not over ten or fifteen minutes for a wound through the pelvis. The patient is stretched on a table, the X-ray bulb adjusted over the wound, the plate put under the limb, or part where the wound is, and the thing is done. The plates are developed almost instantly. In many cases we save hours of vain searching—not infrequently we save the soldier's life."

Dr. J. C. Da Costa says: "A man was sent to the Jefferson College Hospital, who had been shot (11 days before) in the chest with a pistol ball. He was extremely weak; the chest was filled with blood up to the nipple. A few hours after admission he went into a collapse and the dullness extended upward to the second rib, indicating a second hemorrhage. He was anæsthetized and a hot normal salt solution was injected or allowed to flow into the median basilic

vein. (Two quarts were given during the operation.) The chest was sterilized and a U-shaped flap was cut and turned up. A bullet wound was found between the fifth and sixth ribs, which were resected—about six inches of each. There was a fearful gush of air and blood, the blood measured one gallon and one-half pint, the result of the two hemorrhages. The lower lobe of the lung was lacerated, sloughing and bleeding freely. The lung was grasped with the hand and hemorrhage stopped. The pleural cavity was packed around the lung with gauze to keep it in place and iodoform gauze was packed firmly against the sterile gauze and the damaged area, and the ends left projecting from the wound; the flap of the soft parts was sutured in place. The packing was removed in five days; no bleeding followed: sloughs of lung tissue were several times removed from the pleural cavity. Eighteen months after operation the man is strong and well."

Dr. George H. Noble, of Atlanta, treats puerperal sepsis with absolute alcohol as follows:

"After cleansing the uterine cavity, introduce a sterile rubber catheter, which has had previously attached to its tip a strip of sterile gauze about as wide as the thumb and two yards long, then carefully insert the gauze around it, taking care not to pack too tightly, as its object is to act as a retainer for the alcohol and not as a drain or tampon. A few drachms of 95 per cent. alcohol is injected through the catheter every fifteen or thirty minutes until marked improvement has taken place, and as the case progresses the intervals are increased. The end of the catheter projecting beyond the vulva must be kept thoroughly buried in sterile or antiseptic gauze to prevent renewed infection through the instrument. These dressings are left in place for five or six or eight days when ordinary supporting methods will answer, unless the sepsis is marked, then it may remain longer, except when the drainage is interrupted by coagulation in its meshes, in that case it may be replaced by fresh gauze. So far I have not found it necessary to use more than one dressing in the uterus."

A Southern writer says: "The mortality list for one month in the city of Knoxville, Tenn., shows a record of one-eighth of deaths recorded from syphilis, and this is equally true of other large cities. And the increase is great in the country; so much so that a large planter remarked to me the other day: 'Doctor, I believe over one-half of the negroes in my employ are affected more or less with syphilis.' This I believe to be true, and I here assert that from experience I believe that there is but little consumption in the pure negro race, and that much of

the so-called phthisis pulmonalis among black negroes is nothing more or less than a syphilitic tubercular trouble in the pulmonary organs, and the majority of such cases will yield to specific treatment which would not destroy the true tubercular bacilli."

Between the years 1894 and 1898 there were seven colored applicants for license before the South Carolina Board of Medical Examiners. Of these applicants two were licensed and five rejected.

## NOTES.

### The Catarrhal Diathesis.

In catarrhal affections of the various mucous membranes, particularly of the respiratory tract, there exists not only a relaxed atonic condition of these structures but an underlying constitutional state of malnutrition. All authorities agree that in order to eradicate the local pathologic conditions, treatment by appropriate systemic remedies is indispensable; the patient's nutrition must be fostered and restored so that a degree of constitutional vigor is attained which antagonizes the catarrhal processes. Gray's Glycerine Tonic Comp. is the remedy par excellence in these cases because it has a two-fold action. Primarily and chiefly it overcomes malnutrition; it re-establishes normal nutrition by eradicating the ever-present atonic condition of the digestive organs, thus assuring the maintenance of normal digestion and assimilation of food; restoration of tone and nervous force to the entire system, and incidentally to the mucous membrane, is a natural sequence. Gray's Glycerine Tonic Comp. has, moreover, a direct local antiphlogistic and tonic influence upon the disordered circulation of the mucous membranes; it relieves engorgement and restores tone to the relaxed atonic blood vessels. This remedy will prove effective in obstinate and recurrent catarrhal affections of the respiratory and gastro-intestinal tracts which have resisted all other treatment.

### Write for them.

Have you a case of indigestion, acute or chronic? If so write Messrs. William R. Warner & Co., of Philadelphia, for complimentary copy of their book "The Clinical Application of Ingluvin" by John V. Shoemaker, M. D., professor of therapeutics, Medico-Chirurgical College, Philadelphia. It is a very interesting book, beautifully printed on coated paper. Messrs. Warner & Co. are also issuing exceedingly interesting booklets "The Acid Diathesis," "The History of Sugar Coated Pills," (of course you know that W. R. W. & Co. were the pioneer

manufacturers of sugar coated pills); "A Study of Rheumatism." "A Study of Constipation," etc. Any of them will be sent free upon request. Of course each of the books will tell you why it is desirable to specify "W. R. W. & Co." when ordering any of the remedies suggested in the booklets, and the reasons are very good ones. Manufacturing, as they do, the highest quality of pharmaceuticals, physicians certainly secure first class remedies when they specify Wm. R. Warner & Co.

#### Phenalgin.

The combinations the author has used are numerous, i. e., in conjunction with salicylate of sodium, salol, or lycetol in rheumatism and gout; with antiferments and peptogenic compounds in the various forms of dyspepsia and gastralgia; with guaiacol carbonate in phthisis, giving great relief; combining with arsenic or quinine in malarial affections, and more often given alone.

In summing up his experience with phenalgin, the author found it useful in all cases where pain was a prominent symptom, acting especially well in rheumatic and neurotic cases. Also, like most of the drugs of its class, it has antipyretic powers; and in malaria, used alone or combined with small doses of quinine, it aborts or shortens the paroxysm. It has hypnotic as well as anodyne properties, and is of great service in cases where opiates are often indicated, especially as it leaves no bad after effects and engenders no habit.—Dr. J. A. Hofheimer in *New York Medical Journal*, LXVIII, No. 26, page 914.

#### The Petroleum Idea.

As far back as Pharaoh's time petroleum was used to make sick people well, and with larger knowledge and scientific research comes the positive assurance that nothing is better for throat and lung troubles. When properly refined and emulsified its effect is soothing and healing, but there is everything in knowing what oil to use and how to use it.

The best preparation of petroleum for internal use is Angier's Petroleum Emulsion. In the special process by which it is purified they eliminate all the irritating and nauseous properties of the crude oil without losing any of its medical qualities. It is pleasant to take, agreeing with the most sensitive stomach. The combination with hypophosphites makes it a valuable nerve food and tonic.

#### Persistent Insomnia.

H. F. Moore, M. D., of Denver, Colo., writes: "I prescribed Neurosine (Dios) in a case of persistent insomnia, where chloral, bromides, chloralamide, etc., failed, and was much pleased with its immediate results."

#### Sanmetto in Enuresis Nocturna.

While visiting my nephew in Illinois last Christmas he told me his little girl, six years of age, had always "wet the bed" at night and asked me "what shall I do for it?" I procured three ounces of Sanmetto, all the druggist had at the time; the second night she missed, and has had but three nightly emissions in two weeks. He wrote me last week "we consider her cured, but shall keep an original bottle on hand and use if necessary." I have uniformly good results from prescribing Sanmetto in kidney and bladder complaints.

T. T. Hubbard, M. D.,  
Saginaw, Mich.

As long as people will be unwise in matters of diet, just so long will physicians be called upon to treat all forms of indigestion. It, therefore, is well to consider a remedy which is suitably adapted to this condition. We desire to call attention to Ingluvin for treatment of all forms of dyspepsia. It is a bland preparation of the ventriculus callosus gallinaceous. It has a property of soothing the irritated gastric mucous membranes and re-establishing a normal secretion of the digestive fluids. It has time and again proven itself superior to pepsin. Its prescription is attended with more certain results than pepsin. Whenever pepsin is indicated try Ingluvin. It will give you more satisfaction. Messrs Wm. R. Warner & Co., Philadelphia, the manufacturers, will send you sample upon request.

Acute gastritis caused by the excessive use of alcohol, resulting in a serious arrest of the digestive process, causing epigastric distress, gaseous eructations, headache and general nervous tremors, insomnia and other characteristic features connected with such cases, may be effectively treated with Phenalgin in 10 grain doses. This coal-tar product is sedative and stimulating, correcting hyperacidity of the stomach and exercising an analgesic and hypnotic effect over the entire range of the disease. It is especially indicated in cases where cardiac depressants must be carefully avoided. Ten grains of Phenalgin taken at night after dissipation and before retiring, will usually prevent disagreeable sequelæ.

#### Wanted—A Physician.

A reliable young physician is wanted to take charge of an established practice in North Dakota from Dec. 15 to April 1, 1900. Cash salary will be paid, and a horse and carriage, books, instruments, etc., will be furnished. Not much country work. Address P., care of Northwest-ern Lancet, 734 Lumber Exchange, Minneapolis.

## ORIGINAL ARTICLES.

## EXTRA-UTERINE PREGNANCY.\*

BY JOHN T. ROGERS, M. D.

St. Paul.

Except appendicitis alone no subject of modern times has received so much attention from the general practitioner and surgeon as ectopic gestation. A popular subject is always an important one, and that it is important is attested by the great mass of literature which is constantly appearing upon this question in our journals and works of surgery and gynecology. So much has been written on this subject that we are supposed to be familiar with all its phases and yet we see good men making mistakes in diagnosis, and consequently in the treatment of this condition almost every week.

When this condition is not interfered with Schauta reckons the mortality at 68.8 per cent. This seems to us to be a low percentage when we take into consideration the fact that few of these pregnancies go to full term. Most of them rupture into the abdominal cavity, or into the broad ligament, rarely into the uterus, thus causing death from hemorrhage or sepsis or both.

Concerning the etiology of this condition, many varying opinions have been expressed. T. W. Eden has remarked "that ectopic pregnancy is a physiological accident liable to befall any healthy woman during the fruitful period of life. There is no evidence to prove that diseased conditions of either uterus or tubes play any part in its occurrence." (American Year Book of Medicine and Surgery, 1899.) With this opinion we must dissent. In our experience, including about twenty-eight cases, we have yet to see a single case where there has not been some pathological condition to account for the accident. The only one in which the cause was not macroscopic was in a woman upon whom I recently operated, but she gave a distinct history of previous pelvic trouble. Unfortunately, the specimen was lost and we were consequently unable to study it microscopically. I believe with Orthman and Tait that inflammatory affections of the tubes play an important, if not the most important part in the causation of extra uterine pregnancy.

Dr. Kelly sums up the matter by saying that he "believes that extra uterine pregnancy is due to some interference with the normal downward passage of the fertilized ovum through the tubes."

With the symptoms of this condition you are all familiar. Suffice it to say that when we see a woman who thinks she is pregnant, who has missed one or more periods, who has the physical signs of normal pregnancy, accompanied oftentimes with a bloody or dirty brown discharge from the uterus and increasing pain in the pelvis, patient often saying that she "feels different," and when in this patient we get a history of previous inflammatory trouble of the uterus and tubes, some anomaly of menstruation, one or more miscarriages or prolonged sterility, we should at once suspect tubal pregnancy and make our physical examination with this idea in view. A careful history of the case is of the greatest importance, and this, taken with the symptoms and bi-manual examination will almost always unerringly lead us to the diagnosis before rupture has taken place. I am aware of the fact that there are many obstacles to prevent the diagnosis being made before a rupture, but still I maintain that if the family physician will exercise more care in making his examinations when his patient first reports pregnancy, many of these cases would not go to rupture. After rupture the clinical picture is so clear that there seems little excuse for an attendant making a mistake, and the careful physician will always succeed where a careless man will fail in diagnosing the case, and consequently, not recognizing the gravity of the situation, will oftentimes lose his patient.

Adopting Kelly's table of forms of extra uterine pregnancy, we have three varieties.

1st. Interstitial, which may become secondarily intra-uterine, abdominal, intra-ligamentary.

2nd. Tubal, which may become secondarily mole, abortion, tubo-abdominal, tubo-ovarian, abdominal, intra-ligamentary.

3rd. Ovarian, which may become secondarily abdominal.

The second form, or tubal, is by far the most common variety, and if not recognized early and removed, ruptures at the second or third month after conception, and at this time, if the patient survives, it may become one of the secondary varieties enumerated above. The ovarian variety is a pathological curiosity, only a few authentic cases having been reported.

Interstitial pregnancies are the most dangerous forms of extra-uterine gestation with which we have to deal. They are especially liable to rupture into the abdominal cavity and the hemorrhage is often fatal. This variety usually ruptures before the fifth month. Dr. McLaren has recently reported a case of interstitial pregnancy which was terminated by abdominal section thirteen months after conception. The case, as

\*Read at the meeting of the Academy of Medicine, December 5, 1899.

he says, is unique in surgery and is most interesting.

The specimen which I have presented tonight I believe to be one of interstitial pregnancy, which was delivered by abdominal section 11 months after conception. I hope you have examined the specimen carefully and will have no hesitation in expressing your opinion as to the diagnosis. I shall presently report the case for your consideration.

It is unfortunate that a difference of opinion should have existed concerning the treatment of ectopic gestation. I believe that before rupture abdominal section is the only safe method of procedure. All palliative measures, such as injections, electricity, etc., are dangerous and should be considered relics of the past age in surgery. After rupture the best procedure will have to be determined by the symptoms and conditions present in each individual case. If seen early and hemorrhage is still present, of course laparotomy should be resorted to at once. I believe that abdominal section is to be preferred in a large majority of all extra uterine pregnancies.

To my mind, the only contra-indication for this procedure is in those cases where we have to deal with a septic blood clot which has been walled off from the general cavity by adhesions, and it can be reached easily by the vagina. We occasionally see such cases where there have been repeated hemorrhages and where the blood clot has remained for a long time in the cul-de-sac. The question of drainage is important. In fresh cases operated upon under favorable conditions of technique, drainage is unnecessary and may do harm. If there is any evidence present of sepsis or if I am not sure of my technique, I drain after mopping out all the clots. The cases which I desire to report to you tonight represent the two extremes in different varieties of extra uterine gestation.

Case I. Mrs. G——, age thirty years, married one year. Has been treated for pelvic trouble by several different doctors both before and after marriage. She had dysmenorrhœa and leucorrhœa. She was told by a Minneapolis physician that she had a displacement of the uterus, for which she received local treatments. About one month before I saw her she was examined by two good physicians in St. Paul and was told that the pelvic organs were in splendid condition. She missed the next period and considered herself pregnant. At the time when she should have been unwell she had considerable pain, but there was no discharge. Two or three days later, however, she had a good deal of pain of a peculiar character unlike an ordinary dysmenorrhœa and with it a slight bloody discharge. Her physician considered her pregnant and thought she was threatened with miscarriage. Three weeks after

the missed period I saw her. The pelvic pain had increased gradually from the time she thought she was pregnant and at the time she gave most of the ordinary symptoms of pregnancy until the climax came, on June 18th. She believed she had been pregnant about three weeks, when the rupture occurred. I saw her on Saturday evening about eight o'clock, at which time she was in collapse, from hemorrhage into the cavity. She had apparently bled to syncope once during the afternoon. Her family physician had seen her shortly after the sharp attack of pain, which was followed immediately by syncope about five o'clock in the afternoon. Temperature was sub-normal, pupils dilated, skin clammy, radial pulse imperceptible. She was extremely nervous and apprehensive. She began to react under sedatives and slight stimulation. I advised immediate removal to the hospital and operation. At twelve o'clock she was still in a condition of shock. Hypodermoclysis was given and operation postponed until morning. At eight o'clock the following morning I opened the abdomen and found a ruptured tube at about its middle. Abdomen contained about two quarts of clotted and fluid blood. The tube was apparently normal. I could see no reason for the accident. The other tube and ovary were apparently normal, as was the ovary on the side containing the pregnancy.

The tube was tied off and removed, clots were cleaned out and a quantity of normal salt solution was left in the cavity, which was closed without drainage. She was given repeated hypodermoclyses. Recovery was uneventful. This case represents the earliest rupture which it has been my good fortune to see.

Case II. Mrs. F——, age thirty-three, nationality United States. Admitted to the hospital June 4th, 1899. History of the case is as follows: She has had three children, the oldest twelve years, and the youngest twenty-two months. No miscarriages. Always enjoyed good health. The last menstruation occurred July 27th, 1898, at which time she gave a typical history of pregnancy. There was no suspicion of anything wrong until several weeks after the time for delivery. Her physician was called because of pressure of abdominal contents and cystocele. On June 2nd patient was etherized by Drs. Stockman and Patrick and cervix dilated. The uterus found to be about four inches in depth and empty. She was brought to St. Paul June 4. At this time none of the sounds accompanying pregnancy could be heard by the attending physicians.

General condition excellent, appetite good, bowels regular. Cervix softened and shortened, especially the anterior lip. Os gradually contracted after dilatation under ether. Large resistant mass felt posteriorly on right side on



pelvic examination, the nature of which could not be determined.

Operation. Etherized July 2nd, 1899. Median incision extending to umbilicus. Dark reddish brown tumor presenting in wound. Cavity packed with gauze and tumor opened, disclosing in its wall large venous sinuses resembling those of the uterus. Cavity of tumor found to contain a full term foetus. Child extracted and tumor delivered and found to spring from right horn of uterus, with pedicle about two inches broad, which was tied off with cat gut ligatures and removed. Resistant mass felt on right side of pelvis found to be an ovarian cyst springing from the left ovary. This appendage was tied off and removed. Openings in broad ligament on both sides and in uterus on right side were closed with interrupted cat gut sutures. Cavity flushed with normal salt solution and closed without drainage. Peritoneum and muscles closed with cat gut, the fascia and skin with figure of eight silkworm gut. Recovery uninterrupted.

#### OBSTETRICAL EMERGENCIES.\*

BY W. S. FULLERTON, M. D.

Winnebago City, Minn.\*

The practice of obstetrics is fraught with peculiar responsibilities. This is true of normal labors, and how much more so of the abnormal perhaps only those who have experienced some of the trying situations therein can fully appreciate. Upon the country practitioner the burden of responsibility bears, for obvious reasons, with greater weight than upon him of the city. It is the object of this paper, therefore, to briefly consider the most serious of obstetrical emergencies and to elicit a discussion thereon which shall enable those who practice in the country to be better prepared to meet them.

In the first place I wish to say in a general way that it is to be borne in mind that prophylactic treatment is to a very great extent denied to us in country practice, for it is notoriously the habit of our patients to call us for the first time when labor has already begun, or what is far worse, after the neighborhood midwife has waded as deep into trouble as she has courage to go. We therefore are often brought face to face with our emergency without any previous warning or special preparation, all of which points the moral, the country obstetrician must be always prepared, and further, he ought to regard every case to which he is called as one in which any complication known or unknown may occur.

Among the emergencies most to be dreaded a prominent place must be given to eclampsia. It is said that this condition occurs in the proportion of 1-500, though when we consider that very many cases happening in general practice

throughout the country are never reported and are, therefore, not available for statistical purposes, I am inclined to believe it of greater frequency.

Its etiology is still unsettled. The work of numerous investigators has given us this common ground upon which all meet, and where the indications of the most successful treatment are found, namely that it is a toxic condition due to the retention in the maternal system of excrementitious products of metabolism, particularly of those connected with foetal development; that this retention is not due to the failure of one excretory organ only; and that the explosion is due to the special susceptibility to these toxins of a nervous system which is in a peculiarly sympathetic state incidental to pregnancy.

The obstetrician who is fortunate enough to have the supervision of his cases for some time prior to confinement may do much by way of prophylaxis. He is able to take advantage of the first danger signals. Prophylactics recognized by modern practice as the best are, exclusive milk diet, free catharsis, and baths to promote thorough action of the skin. The milk diet is to be continued even though existing albuminuria is not lessened.

In the presence of actual convulsions the treatment will be modified by the particular stage of pregnancy at which they take place. During the earlier months the question of emptying the uterus is only to be considered as a last resort. The chief argument in its favor is the fact that the tendency to convulsions ceases upon death of the foetus. Our efforts in these cases occurring previous to term must be directed toward control of the seizure and to the elimination of the poisons circulating in the blood, using such means as are best calculated to carry the patient through to term and ensure a living child. To this end chloroform by inhalation, chloral hydrate 40 to 60 grains in solution in some bland fluid such as milk and egg mixture by rectal injection, repeated in half an hour if necessary, five minims of fluid extract of veratrum hypodermically for its effect upon circulation, reflex nervous centers and kidneys, are the means best suited for the control of the convulsions. Many good authorities advocate the use of large doses of morphia hypodermically, and it is certainly effective in controlling the convulsions. Personally I am in doubt about the propriety of enhancing the danger to the life of the foetus by the addition of this special alkaloidal poison to the toxins already circulating in the blood. Bromide of potassium and other potassium salts were better not used unless for a certainty no organic kidney lesion exists.

To hasten elimination active catharsis by croton oil or elaterium is called for, and hot baths or packs to increase the action of the skin. To

\*Presented to the Section of Obstetrics and Pediatrics of the Minnesota State Medical Society, June 23, 1899.

increase kidney activity there may be given in addition to the veratrum already mentioned considerable quantities of normal salt solution, injected in the loose areolar tissue of the groin or axilla. Hypodermoclysis is better than the intravenous method. When these measures, judiciously applied, fail, it becomes necessary to empty the uterus.

For eclampsia at term the foregoing treatment applies in a general way. The prominent additional indication is to terminate labor as speedily as possible without undue violence.

Cases occurring post partum demand the same general line of treatment. In these there is not, as a rule, any necessity for blood-letting, though special conditions must govern. When employed it had better, except in the very plethoric patients perhaps, be used in conjunction with saline infusions.

My objection against morphia does not hold here, though there is the contra-indication, valid in all cases, viz., its action in locking up the secretions.

**Placenta Prævia.**—This is another serious emergency confronting the obstetrician in which the life of the mother depends upon prompt and efficient action. The loss of blood must be checked or death is inevitable. This is the first indication. The country practitioner in the presence of this condition is almost always compelled to act alone, to depend upon himself at least in the beginning. His course must be governed by the severity of the case and the stage of pregnancy. In the bleeding coming from a placenta marginalis if it be not very profuse, it will usually suffice to carefully tampon the vagina with pledgets of damp aseptic cotton through a Sim's speculum, at the same time elevating the foot of the bed eight or ten inches, while a sedative dose of opium should be given and labor allowed to progress without unnecessary interference. The same may be true in placenta partialis. All depends upon the amount of blood being lost. The hemorrhage and not the arbitrary division of the condition into varieties determines the treatment.

In placenta centralis or in any case where the hemorrhage cannot be safely controlled by these means, delivery must be brought about as soon as possible. The placenta is to be separated as far as the finger can reach, by sweeping it around the internal os. Mechanical dilatation of the os, a passage through or beside the placenta, and rupture of the membranes follow. Then if the head is found to engage the pressure from it will check the bleeding as labor advances and the chances are as favorable for a living child as they can be. Failing in this we must perform version as quickly as possible and bring down a foot through the os. The case may then be left to nature with the assurance that dangerous bleeding will be checked by pressure from the foetal

body. In these cases we cannot consider very seriously the welfare of the child. It is useful as a mechanical hæmostatic and to that end must it often be sacrificed.

These are the methods which I believe are best suited to the circumstances surrounding the country obstetrician, and the safest. The attempt to use Barnes' dilators, the De Ribes bag and such mechanical appliances supposing them to be at hand, will too often prove vexatious and dangerous.

Normal salt solution and means for its use should always be ready in these cases.

**Rupture of the Uterus.**—A very fatal and not extremely rare accident is rupture of the uterus. Placenta prævia is said to hold an etiological relation to it on account of the increased softening of the cervix and lower segment which exists in that condition. All conditions which weaken uterine tissue or increase the vis a fronte are etiological factors. The chief symptoms of its occurrence are sharp abdominal pain, sudden cessation of labor pains, shock, pallor and syncope without sufficient external signs of hemorrhage to account for the condition. The attendant is placed in a very trying position. He must decide quickly upon delivery per vias naturales or by abdominal section. Some cases where the injury is not extensive recover after delivery per vaginam and moderate gauze packing of the uterine cavity, the contraction of the organ, closing the rent and stopping hemorrhage. The weight of testimony, however, is in favor of abdominal section. The advocates of this procedure claim it unwarrantable to subject a woman to the increased shock, the danger of enlarging the tear and increasing bleeding which attend the manipulations of a vaginal delivery, and to the uncertainty involved in leaving an unseen and incompletely cared for wound to nature.

Nor is there time to send for an operator skilled in abdominal surgery. There is more danger to the patient from delay than from an abdominal section performed by a general practitioner with ordinary skill and a knowledge of modern aseptic methods.

Withal it requires a great deal of moral courage for the attendant to operate in a case of this kind. In the event of the patient's death he is going to be blamed if he does, and blamed if he does not, but in any event he will probably have to bear the odium of a mismanaged case no matter how undeserved. The best interests of the patient must be his incentive to action.

**Post Partum Hemorrhage.**—The careful obstetrician will seldom be called upon to deal with post partum hemorrhage in his own cases. In this the proper treatment is to give a hypodermic of normal liquid ergot, then to pass the disinfected hand into the uterus and clean out the clot; this hand still in the uterus, with the other make

compression upon the organ through the abdominal walls. Uterine contractions will generally be prompt and efficient. The hand in the uterus is allowed to be forced out while the other maintains its grasp upon the contracted organ till safety is assured. When these measures fail, intrauterine injection of hot antiseptic solutions may be tried. The most effective chemical hæmostatic is hot vinegar. In these douches no complicated apparatus is required. The os being patulous, the clean rubber tube of a fountain syringe or a siphon tube from an ordinary pitcher may be passed directly into the uterus. We may also pack the uterine cavity lightly with gauze. The danger of infection must be kept in mind. The bleeding being controlled it may be found necessary to compensate the system for the blood lost and to stimulate the patient. Here again is a fitting occasion for the use of the normal salt solution. The merits of this measure can hardly be overestimated.

The last class of emergencies which I shall mention are those arising from contracted pelvis, and disproportion between the size of the fœtus and the maternal parts. Labors of this kind must always be terminated by operative interference. The choice must be between craniotomy, abdominal section, symphysiotomy or the doubtful procedure of version. Each of the first three has its own field. Craniotomy where the child is dead, abdominal section in extreme contractions, and symphysiotomy where the true conjugate is not less than  $2\frac{3}{4}$  inches, (7 c. m.)

Allow me to suggest in conclusion that many of us—I include myself—ought to overhaul our obstetric bags and see that they are better equipped to meet these emergencies which may come upon us when least expected. I am convinced that a far too dangerously incomplete equipment will be found to be the rule among country obstetricians. The obstetric bag should be looked upon as an emergency case and should be very thoroughly fitted out to meet all demands liable to be made upon it. Reform along this line cannot be too earnestly urged.

### CROUPOUS PNEUMONIA.\*

BY A. A. FINCH, B. Sc., M. D.

Blooming Prairie, Minn.

In this climate of Minnesota, where acute pulmonary troubles are so common, croupous pneumonia seems to me to be a disease that should receive our most careful consideration, and the fact that sixty to seventy per cent. of deaths in persons over sixty years of age, if produced by an acute disease, are due to pneumonia is sufficient to make the study of its diagnosis and treatment most important to us.

There are many cases of pneumonia classified by Osler as terminal pneumonias, coming on late in life and in persons previously afflicted with some chronic trouble, that are not recognized except at the post mortem, and could all these cases be properly diagnosed we should find pneumonia classified as a more serious disease than it now is.

Pneumonia, is an acute, infectious disease, sudden in onset, which in a majority of cases is a chill of more or less severity.

It is a common mistake among the laity, and some physicians are by no means exempt from the same error, that pneumonia threatens, but it never does; it is an open, frank disease, "casting no shadows before," but is pneumonia from the beginning.

It has been pretty well established that cases of pure pneumonia are due to a specific germ, the pneumococcus, but they can often be found associated with other germs, more commonly the streptococcus, which can be found in the sputum. Further it does not seem sufficient that the pneumococcus alone be present, but the system must at the time of infection be depressed; a lowered vitality must be present in order that the germ may find a suitable ground in which to multiply and produce toxins capable of further depressing the major organs of life.

There is a difference of opinion as to whether pneumonia is a self limited disease or not, some claiming such to be the case and that the natural tendency is toward complete and perfect recovery, whereas Dr. Mays, of Philadelphia, scoffs the idea, claiming that there is a close relation between the crisis and the fatty changes which take place in the exudate in the lung, and that if the vital forces have not been sufficiently supported, the metamorphosis will be protracted, or caseation may replace it and the crisis will be entirely absent.

Pneumonia begins as an inflammation of the air cells, and the products of this inflammation soon occlude a portion of the lung; this forms the period of invasion and is followed in from twenty-four to thirty-six hours by the stage of red hepatization, during which no air can enter the affected portion. It is during this stage that a portion of the pulmonary area is so completely occluded that the heart must work laboriously to overcome this obstruction; the system is now thoroughly impregnated with toxins, and many of our patients die in this stage. Red hepatization lasts from five to seven days, when the crisis comes on and the lung passes into the stage of gray hepatization. Not in all cases does the temperature fall by crisis, but sometimes more gradually by lysis, and so with the lung, portions may be so completely occluded as to cut off all circulation and a single large abscess or several small ones may form and so prolong the case, or even gangrene may supervene.

\*Read before the Steele County Medical Society, November 7, 1899.

Another complication, although rare, is phlegmasia alba dolens; it is similar to that found in typhoid and appears late in the disease. The affected leg becomes stiff, there is a sense of weight and pain, it becomes white, is hard and elastic, but does not pit on pressure, and the saphenous vein is prominent. Neuritis has been observed complicating pneumonia and also inflammation and suppuration of the parotid gland.

The symptoms of pneumonia in a typical case consist of the initiative chill, sudden rise of temperature, hurried respiration, the dusky flush on the cheek bone, a rapid pulse full and strong; the right heart is overworked because of the obstruction and there results a congestion of the abdominal organs, more especially of the liver with its associated symptoms; pain is complained of at or near the nipple and is increased by pressure; cough comes on, at first harsh and ringing with a glairy, viscid and tenacious mucus, soon followed by the characteristic rusty sputum, becoming yellowish when resolution sets in and also much more copious.

The nervous symptoms consist of headache, sleeplessness and delirium, which is more common in drunkards. Gastric and intestinal disturbances may come in; the urine is scanty, high colored and the chlorides are much diminished.

The physical signs of pneumonia depend largely upon the amount of pulmonary tissue involved. If a large area be affected the signs present will be easily discernible.

Inspection shows a diminished movement of the affected area; palpation during the first stage demonstrates a vocal fremitus above the normal, whereas in the second stage it is much exaggerated; on percussison there is dullness of the affected area; while the stethoscope in the first stage shows a feeble vesicular murmur and the crepitant râle more distinct during inspiration, in the second stage there is bronchial respiration, while in the third we again find the sounds changing as resolution progresses to the crepitant râle together with some large, moist, bubbling râles.

A typical case of pneumonia should present no difficulty of diagnosis; pleurisy is about the only disease liable to be confounded with it, but the friction sound, the moveable area of dullness, the character of the pain and the displaced apex beat should be sufficient to enable us to make a differential diagnosis.

The German writers claim that there is a pneumonia due to streptococcic infection. It is characterized by a more purulent and less rusty sputum, the patient has a septic look, with an irregular temperature which falls by lysis more commonly than by crisis. The local phenomena appear late and involve the upper portion of the lung with a marked tendency to wander, and because of this peculiarity it has been termed "erysipelas of the lung." In this form, the duration

of the physical signs is prolonged, the prostration is great and it is often months before the patient recovers from the severe sepsis to which the system has been subjected.

Catarrhal pneumonia is essentially the pneumonia of childhood and old age. Carmichael says that infantile pneumonia cannot be considered a specific disease, because it has been shown that similar changes in the lung are produced by a variety of organisms.

The fact that the alveoli of the lung in children are not fully developed until the fifth year of extrauterine life, accounts for the fact that the same infection produces a catarrhal pneumonia in children which in adults produces a fibrinous form.

Passing on now to the last and perhaps the most important division of our subject, viz: treatment, we may conclude from what has been said that in treating a typical case of acute pneumonia we must reduce the fever, lessen the amount of blood in the lungs, give support to the depressed organs and limit if possible the inflammation in the pulmonary tissue.

We cannot abort a case, but we can, by proper therapeutic measures, so modify the severity of the disease that the vital centers can withstand the toxæmia to which they are subjected, to a favorable termination. This is not true in all cases, by any means, for in some cases the toxins exert so powerful an influence that either the heart or respiratory centers or both fail, any treatment seems of no avail and our patients die almost without warning.

Clinical experience teaches us that a gradual weakening of the heart may cause death, whereas in other cases in which the constitution seems strong and vigorous, a fatal termination comes on most unexpectedly; we appreciate that the cause in both is the same, a toxæmia so powerful as to overcome the nervous centers, and the question arises—Do we not overrate the pulmonary lesion? We know that when the crisis comes on there is a sudden change for the better in both respiration and circulation, and yet the physical condition of the lung is not changed in proportion to the improvement noted.

The study of the treatment along these lines would lead us to believe that an agent will sooner or later be developed in serum-therapy that will counteract these symptoms, and an antitoxin will be discovered by means of which we can specifically treat a case of pure pneumococcic infection.

For the removal of the developed toxins venesection has been advocated, and not two years since a statement was made that the death rate of pneumonia had in the last ten years increased ten per cent. because venesection had been neglected; for my part so few cases seem fitted for such treatment and so much care must be exercised in their selection, that to advocate it as a measure to

be used by all who hold diplomas as M. Ds. would be a dangerous procedure, and we should see the death rate increasing to an alarming extent.

Far better would it be to use the natural excretory organs of the body, keeping the skin soft and clean by means of sponge baths, exciting the kidneys by administering plenty of water and emptying the intestinal canal and keeping it so during the entire case.

We should support our patient by means of proper nourishment, administered at stated intervals, and in such amounts as not to disturb the digestive organs. Let the sick room be large, clean, cheery, and by all means let it contain plenty of pure air obtained from out of doors by proper ventilation.

The heart, respiration and temperature should be watched very closely, the relation of the three should be proportionate and any variation of this proportion should be met by the proper remedies. Cardiac failure should be met by strychnine or digitalis; my preference is for strychnine as it acts as a stimulus to the muscular coat of the bronchioles, thereby aiding expectoration, it benefits the nerve centers and so carries the heart beyond the crisis to a point where the toxins have ceased their depressive influence.

There is one other line of treatment to which I wish to call your attention, for the reason that it has proved in my hands the most successful of any I have yet used, and its simplicity seems to me a recommendation. It is the application of ice to both the head and chest. This not only reduces the fever but quiets the nervous system and limits the extension of the pneumonic process, by contracting the capillaries of the pulmonary area; it hastens resolution and breaks up the exudation products; it is an excellent sedative to the centers of circulation and respiration; it supports the heart, alleviates difficult breathing, relieves pain in the chest and gives the patient rest and comfort.

If ice alone will produce all the results just recounted, and in my hands it has in many cases, it seems to me the therapeutic measure par excellence in acute pneumonia.

As to the method of applying ice, the ice bags are about the best and the number to be used depends upon the severity of the fever and the area of lung involved.

To the head two are generally applied if the fever is high, and I always suspend them if possible so as to have them in constant contact and yet the weight removed; to the chest we should, if we find the base of one lung involved, cover the affected portion and also the base of the opposite lung to prevent the appearance of the disease there, and place one above the diseased portion so as to prevent its spreading upward. The length of time they should remain depends on the amount of fever present; as long as it is high they should remain, but should the temperature

fall to normal and tend to remain there we may gradually remove them, but we should not be overanxious to remove them, as the fever may again rise and it is more difficult to bring it down a second time. At times we find fever present regardless of our ice being on or off and we then know that a new portion of lung is involved and we must find it and immediately cover it with ice.

Fever and the local lung lesion are, we know, not fundamental lesions, but they are powerful disease phenomena and are so often the cause of death, that we should combat them at every point and by every means.

Ice alone will not cure our cases of pneumonia; internal treatment must be used in conjunction with external applications, and here as before I place strychnine before all remedies for the reasons already recounted.

In administering this drug we should give it in doses large enough to produce effects up to the toxic point, beginning in adults with one-thirtieth of a grain four times a day; in alcoholics even larger doses will be borne.

Dr. Mays, of Philadelphia, advises giving tincture of capsicum; it being a diffusible stimulant is of importance in cases accompanied by low, muttering delirium, carphologia and a tendency to coma, with a black, crusty tongue. He gives it in doses of from ten to twenty drops in water every three or four hours, and in alcoholics even a teaspoonful.

Sleep in pneumonia is most important, and morphia in one-fourth grain dose, hypodermatically, or some of the hypnotics with a ten grain suppository of asafetida at bed time will produce a quiet and restful night. If cyanosis and alarming dyspnoea appear, inhalation of oxygen when it is possible should be resorted to, as was done in the case of Rudyard Kipling, in New York, where it attracted much attention and was claimed to be the means of saving his life. Venesection is also recommended for the same purpose. Should our case present a rheumatic history, then the salicylates will often relieve the pains in the joints complained of in these cases.

As I have already said proper nourishment plays a most important part, and care should be exercised that the food our patients receive is concentrated and easily digested, for should we once disturb the digestive tract we have removed a very important prop from our patient.

Stimulants are best administered in the form of whisky or brandy in milk at stated intervals.

In conclusion, it is my opinion that taking the pneumonia statistics as collected from the various methods of treatment, we are compelled to give preference to the external application of ice as that from which we can most reasonably expect the best results, until perhaps an antitoxin shall be developed, and we can say that we have a specific in pneumonia to the same extent that we now have one in diphtheria.

## OBSTRUCTION OF A DEVIATED RECTUM DUE TO THE ENCROACHMENT OF THE RIGHT UTERO-SACRAL LIGAMENT.

By JOHN H. RISHMILLER, M. D.

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Minneapolis.

As is well known, the rectum is supported and held in its position by the levator ani, the recto-coccygei and the sphincter muscles. Any lack of proper support of the muscular or fascial structures of the rectum, such as we encounter in marasmic, or in any constitutionally debilitated children, accompanied by chronic catarrh, with tenesmus of the lower alimentary tract and attended furthermore by chronic constipation, is the most prolific predisposing cause of prolapsus recti. Congenital rectal strictures, such as arise from congenital folds of mucous membranes and valves, cause impairment of free and easy defæcation immediately after birth and must likewise be regarded as abettors of rectal prolapsus.

In the classification of strictures of the rectum, Tillmanns distinguishes, with reference to their origin, the following: (1) congenital strictures; (2) inflammatory strictures, from inflammatory processes, especially syphilis; (3) cicatricial strictures, from cicatricial contraction; (4) those due to tumors of the rectum; (5) those resulting from diseases of the neighboring organs.

I have mentioned these facts in order to be relatively more explicit in the thorough elucidation of the clinical history I wish to present. For this interesting case, I am under obligation to Dr. Morton, who sent her to me on May 20, 1896, for a gynecological examination. This patient had consulted three other physicians, but their attention inadvertently must not have been particularly directed to the rectum, else they would have duly appreciated the existing abnormality and consequential obstruction. It is my invariable rule to examine the rectum after every gynecological examination, and to this, probably I owe my not having been led astray.

Anamnesia. Mrs. N., aged 41 years; housewife; married 17 years and no children. First menses at 17 years, and has always been regular. Menstruation four or five days, and as to quantity and character, normal. Has dysmenorrhœa before, during and after her period, accompanied with a severe headache. Has had leucorrhœa for a number of years, and always increased when the patient is under mental excitement. When the patient was two years old she had rectal prolapsus, which was reduced without difficulty, by her mother. Twenty years ago she jumped off a fence, and has had, off and on, more or less severe pain in the right iliac region. This has been getting worse for the past eighteen months. Patient has had backache, radiating down the right

thigh, for twenty years; this has increased since last winter. Has had frontal and occipital headache for a long time. Patient has been troubled with severe constipation all her life; the pain has been gradually increasing and she has constantly to take some cathartic. Has a constant rectal tenesmus, and the shape of the fæces she describes as narrow and thin. Defæcation painful. She has been troubled with catarrh of the stomach for a long time. Her general appearance is sallow and cachetic.

Status Præsenus. Vaginal examination disclosed the uterus to be strongly drawn towards the right side by the right utero-sacral ligament. The patient had seemingly a contracted pelvis and decidedly a very narrow vagina, which had been made so exquisitely sensitive through the acrid leucorrhœal discharge that an accurate bimanual examination was ultimately made under serious remonstrance. The right uterine adnexa could hardly be made out and were very tender on even the gentlest manipulation.

On passing my left index finger into the rectum, it followed the course of the rectum to the right of the pelvis. The indurated, shortened and thickened utero-sacral ligament encroached upon the abnormal course of the rectum in such a manner as to cause the patient, unquestionably, serious hindrance to free evacuation of the bowel. I made no further effort to determine exactly how far above the pelvic brim the alimentary tract was situated on the right side, as I was firmly convinced that all her ailments and symptoms were directly referable to the chronic inflammatory adhesions of the rectum with the right utero-sacral ligament.

When I was house physician to the German Hospital, of New York City, a case of right deviation of the rectum came to my observation in a man who had died of carcinoma of the liver, and consequently a necropsy brought this abnormality to light. The clinical history gave no reference whatsoever to any rectal complication.

Treatment: The local treatment that I advised and prosecuted is very gratifying to one who is a disciple of conservative gynecology and an advocate of massage. I decided to use such treatment as would stretch the utero-sacral ligament, absorb the exudate and generally build up the constitution. If I could accomplish that I should relieve my patient, notwithstanding, leaving the rectum in its abnormal situation. I massaged the right utero-sacral ligament and its adherent rectum for five minutes, three times a week.

Each massage I followed up by thoroughly glycerinated vaginal tamponade with the patient in the genu-pectoral position, directing all the force and pressure of the tampons upwards and towards the right side. The tampons were removed at the end of thirty hours and followed by

a douche at 110° F. for fifteen minutes. This douche was repeated every six hours, until the next treatment. Towards the conclusion of this line of medication the ligament and parts were so pliable and stretched that as many as eight or ten ordinary tampons could be inserted. Finally as the inflammatory exudation had been absorbed, the utero-sacral ligament, the uterine adnexa and the rectum appeared pliable and free from sensitiveness to treatment. At the commencement of my treatment, I gave cathartics freely—aided by high enemata of soapsuds.

In conclusion, I accomplished my end by entirely relieving the patient of her aggravating constipation and thus enhancing her general health. Very few cases have given me more gratifying results than the outcome of the one whose data I have presented. Constitutionally, I gave tr. cinchonæ comp. ʒi. t.i.d., fifteen minutes a.c., and Fowler's solution, minims v, t.i.d., p.c.

I believe the solution of her whole trouble may be traced back to the time of her rectal prolapsus in childhood. After its reduction, the mesocolon of the sigmoid flexure and the peri-rectal tissue must have been so loose as to allow the rectum to be pushed over towards the right side, and through some starting point of inflammation adhered in the position in which it was detected on my examination.

One peculiar feature of interest was the noteworthy sympathetic relationship of the eyes to the pelvic viscera. Her oculist tried to fit her with glasses while I was doing my part of the pelvic treatment. He made several attempts and every ocular examination gave conflicting refractory results, so that finally he concluded to wait until my discharge of the case; he then obtained satisfactory results.

The succeeding data have been furnished to me by Dr. Morton.

"Mrs. W. J. N. Aged 41. White. Patient consulted me May 9, 1896. She is a small, thin and neurotic woman, suffering with asthenopia and headache.

Vision in each eye, 6-5. In the right eye has a low grade astigmatism against, and in left eye with the rule. With the exception of 1° of esophoria, the ocular balance is normal. Ophthalmoscopic examination shows almost emmetropic refraction in both eyes, with no gross lesions of the fundi."

I have lately used on vaginal tampons, a preparation made by the Muford Co., which deserves laudable mention for this particular class of work. It is a composition of the following parts:

Ichthyol.....	5.0
Tr. iodine.....	3.0
Glycerite of hydrastis.....	42.0
Boroglyceride.....	50.0

This formula, as can be comprehended, embodies ingredients of a very desirable proportion.

**THE EFFECTS OF SCHOOL LIFE ON THE EYESIGHT OF SCHOOL CHILDREN.\***

BY EDWARD F. PARKER, M. D.

Charleston, S. C.

The eye takes its pictures by means of its focusing lens and sensitive plate or retina just as the ordinary camera or kinteoscope does, only with more wonderful rapidity and with more marvellous accuracy. Here, however, the comparison ends, for the development of these fleeting impressions requires the coöperation of the brain, and mental assimilation is necessary in order to fix the image and render it perceptible or capable of reproduction. The mechanisms which permit of such incomprehensible delicacy of adjustment, even without the aid of conscious volition, must necessarily call for gentle care and scrupulous attention until at least their component parts are thoroughly developed and permanently welded.

The purpose of this paper is to call attention to the fact that these momentous changes which take place in the structure and internal arrangements of the organ of vision are largely the results of school life. The eye is subjected to destructive influences at a time when it is least prepared and able to resist them. The hopes and destinies of a country are alike centered in her school children. From a physiological as well as a mental and moral standpoint the years of school life are the most important in the individual's existence, because at this time the tissues and faculties are pliable and yielding and easily modified for good or ill by circumstances or environment. Deterioration in any organ at such a time is most disastrous, because it is most lasting and permanent. To protect growing children every barrier in the way of perfect development should be removed.

The eye is only a part of a complex whole, and so a consideration of those precautions and safeguards necessary for its protection must necessarily involve a consideration of those general hygienic principles upon which the perfect development of the body and of all of its organs depends. General school hygiene, in so far as it affects the general health and welfare of the child, has much to do with the proper care of the eyes in school, but the time at my disposal and the purpose of this paper do not permit of such a broad view of the subject under consideration.

Many children begin school with defective eyes, just as they begin with deformities of various other organs or parts of the body, but of those the result of accident, or else perhaps the result of the fateful law of heredity, we shall have but little to say; they begin the race of life crippled at the outset, and the best we can do for

\*Abstract of a paper read before the South Carolina State Medical Society.

them is to modify the curriculum or course of study so as to materially reduce the incidental evils encountered in the course of an education, and thus permit them to share its blessings under more favorable auspices than their more favored fellow beings. Special books, with clear, large print, and a course of study, arranged to suit their limited visual capacities are the only means by which they can be reasonably and safely educated.

Statistics show, however, beyond dispute, that a large number who enter school with normal, or more correctly speaking, practically normal eyes, and good vision, leave it with eyes either irreparably damaged or seriously impaired as thoroughly satisfactory and useful organs. It is of this vast army that we wish to speak now, and it will be my object to discuss the nature and causes of this visual deterioration, as well as to call your attention to some of the measures which have been suggested for its prevention and amelioration by observers in different parts of the world.

Examinations of 53,069 children in public schools of Baltimore during the year 1895-96, showed that 60 per cent. had what we might call good eyes, and 40 per cent. or over 21,000 children, had defective or diseased eyes. Such children can only be reached by preliminary entrance examinations, and if we remember that these defects are capable of transmission from one generation to another, we can form only a feeble idea of the profound importance of the subject. My object will be to discuss the causes of this visual deterioration, as well as to suggest some remedial measures to prevent the same. Statistics of other cities, some much worse, might be recited indefinitely, but one is sufficient for our purposes here.

All eyes are either emmetropic or normal sighted, hypermetropic or far-sighted, myopic or near-sighted, or astigmatic.

The normal eye is one in which the rays of light are focused accurately on the macula of the retina, no unusual muscular effort being required.

When the rays of light are not focused on the most sensitive portion of the retina then obscure vision results, and this is said to be due to an error of refraction, which may be corrected by carefully fitted lenses of several kinds.

An error of refraction may be due to either myopia, hyperopia or astigmatism.

In myopia the eyeball is too long, rays of light focus before they reach the retina and then diverge. In hyperopia the eyeball is too short and rays of light focus after they have passed the retina. Convex spherical lenses are used for the correction of this difficulty. In astigmatism the corneal curvature is generally at fault, and convex or concave cylindrical lenses must be employed.

Glasses are a protection against harm, and are just as necessary if needed as clothing. "If at the beginning of school life the congenital and acquired anomalies of refraction could be carefully corrected, we should have much less complaint about the eyes, and should hear much less about the evil influence of schools on the eyesight of school children."

It is the constant use and abuse of certain tura- and extraocular muscles in the effort to so change the shape of the defective eyeball as to permit the rays of light to be correctly focused, which gives rise to a group of symptoms which we now call "eyestrain."

Statistics show that the normal eye is rare, that the hyperopic or short eyeball is the most common and that the myopic or long eyeball, absent almost before the school age, gradually increases in its percentage during school life. Myopia is a disease of childhood. When the eyes are overtaxed the young and undeveloped tissues of the eyeball are unable to stand the strain of the pressure excited by incessant use of the ciliary and recti muscles necessitated by constant near work, the tunics are stretched and myopia succeeds hyperopia or emmetropia perhaps. This explains the steady fall in the percentage of hyperopia and the correspondingly steady rise in the percentage of myopia during school life.

In defective eyes there is a constant struggle to improve the visual acuity, and these changes in shape and refractive power are much more readily and easily brought about, because the necessity for eyestrain is much greater, the more marked the error of refraction. In normal or hyperopic eyes, subjected to too constant near work, and in defective eyes, under the same conditions, the subjective and objective symptoms of eyestrain soon give us warning. Headaches, painful eyes, red eyelids, impaired vision, photophobia, neuritis, ciliary spasm and retinitis are all danger signals which appear when the eyes are abused or over worked and disappear when rest restores the muscular equilibrium. In America about thirty per cent. and in Germany nearly sixty per cent. of school children are myopic. The examinations of school children all over the world by the most competent oculists and the statistics of the same show conclusively that myopia is the result of the continuous use of the eyes for near work at school, and that the influences which are responsible for its production are only or most effective in young eyes.

The infant's eye is not adapted to near vision at once; just as it learns to walk, it learns to see.

The necessary requirements of school life result in the injury of many eyes.

The statistics of school examinations made by the most competent oculists and collected from the most reliable sources all over the civilized



world show conclusively that myopia is a result of school life or of the educational system.

So much so is this the case that some claim that the myopic eye is the civilized eye, merely an outgrowth of the emmetropic and hyperopic eyes. Opposed to this view are the facts that the myopic eye is only developed in those whose near vision is constantly and excessively used in their early life, while jewellers, draughtsmen and others who begin using their near vision late in life are not subject to it, in the same degree at least.

Myopia is characteristic then only of those occupations which tax the accommodative muscles of the eyes early in life when they are weak and undeveloped. Myopia, as it adds nothing to the usefulness of the eye, must undoubtedly be regarded as one of the pernicious effects of higher education.

Children begin their educational training at too early an age, and continuous work at a near point should be avoided during the first years of school life. Public kindergartens should be established and the child should attend these until they are seven or eight years old at least.

Prof. Patrick, in the *Popular Science Monthly*, in an article entitled, "Should children under ten learn to read and write," says: "In the whole life history of the man there are no movements requiring finer coördination than those of writing with pencil and pen, yet our school system requires these of the child of six or seven years, makes them, indeed, a prominent part of elementary school life." "In addition to the motor specialization of reading and writing is the physical confinement in the narrow seat and desk and which is necessarily connected with them. The child of six or seven has not reached the age when such confinement is natural or safe."

A school house should be a scientific, educational appliance. The system should be made to fit the child, not the child made to fit the system, as has been well said.

This lesson was practically learnt, and taught to us by the immortal Froebel, and the kindergarten of to-day owes its origin to his forceful and original grasp of the principles and facts above related. Of his life and work we cannot speak in too exalted terms, and a great stride has been made, if his successors and imitators do not overlook the basic principles of plenty of fresh air and sunshine, a plenty of healthy recreation, a maximum of instruction, with a minimum of study.

So much then for the nature and causes of eye deterioration. When we consider the remedial measures we are astonished at the grand possibilities and wide scope of the subject.

School architecture, furniture, ventilation, lighting, sitting, maps, blackboards, type, all sug-

gest themselves as worthy of the closest scrutiny and attention.

Dr. Hiram Woods in a report of "The Recent Examination of the Eyes of Baltimore School Children," says: "Care of school buildings should include any part of the school arrangements a defect in which is apt to injure the eyes." "It demands: Securing a sufficient supply of light from the proper direction, placing blackboards so as to give them proper illumination, arrangements of seats and desks so as to make it possible to seat children comfortably and to allow them to do their work under normal conditions; selection of text-books with print of good size, clear and distinct in form; paper free from 'dazzle,' to quote the expression used not long since by a young patient in describing her geography; arrangements of the curriculum so as to allow sufficient time for recreation. All these are clearly connected with the welfare of the children's eyes."

If the facts above mentioned are true, let us heed the warning and see that the best devices are employed to render as harmless as possible the unavoidable evils of school life.

Let us, as has been suggested—shorten the hours of study, reduce the amount of work to be done at home, make frequent breaks in the continuity of the work and vary continually the character of the work.

Let us have more teaching and less parrot-like exercises for the memory. Have less cramming for examinations and more useful knowledge leisurely and intelligently stowed away in the mysterious and roomy recesses of the brain.

"We know that under the pressure of study the eyeballs tend to elongate and increase in size in direct proportion to the number of hours per diem they are employed at near work, and the disabilities, hyperopia, astigmatism, ill health, hereditary tendencies, poor light, and vicious habits under which the studies are pursued."

The appalling discoveries we have alluded to have already led to great reforms in faulty educational methods.

Dr. Casey A. Wood, in an address on "The Effect of Kindergarten Work on the Eyesight of Children," says that it should be a part of the teacher's duty, in the public schools as well as some private institutions, to note any defects of vision, and to recommend their correction if possible. If the defect cannot be remedied, then the near work with the eyes should be avoided until the child is eight or ten years of age.

In an article on "Defective Eyesight in American Children," Dr. Frank Allport reviews the methods he originated and pursued in the schools of Minneapolis, which have proved most successful, and which have been followed, independently, by Drs. Woods and Harlan in Baltimore, with equal satisfaction.

Many plans had been suggested before, but owing to popular prejudices, professional jealousies, economic considerations, as well as political influences, all had failed. The plan proposed by Dr. Allport overcomes all the difficulties, and is likely to be generally adopted, as it involves but slight expense and is practical, simple and efficient. An oculist is appointed by the Board of Education to lecture to the teachers on the elementary principles of ocular physiology and hygiene, and to instruct them in the use and meaning of the test-types. Every child is examined preparatory to beginning school and if the vision is found below a certain standard a printed circular is sent to the parents warning them of the condition, and advising them that a reputable physician be consulted, an oculist, not an optician.

The Snellen's test-type for measuring visual acuity are easily understood, and any intelligent person can, in a short time, become familiar with their application. It is only necessary to know that the child's eyes are too defective to permit of safe use, and the further examination as to the nature and cause of the trouble can be left to the oculist or physician, who possesses the necessary skill and scientific information.

Such an examination as outlined for the teacher is short, effective, and consumes far less time than might be imagined.

The notification to the parent contains no compulsory words, and the correction of the errors, so far, has been left generally to their parental instinct.

In large centers of education, such as New York, Philadelphia, Baltimore and Minneapolis, such examinations have been made, and the most beneficent results may be expected in the future.

The practical results following the correction of visual defects as far as possible have been shown in the charts prepared by Dr. Risley, of Philadelphia, whose article "On School Hygiene," in Norris and Oliver's *System of Diseases of the Eye*, makes him facile princeps in this line of research work, and has won for him wide recognition as a master of the subject. These show a marked reduction in the percentage of myopia in school children from 1874 to 1893 as a result of the correction of errors of refraction.

Dr. Risley concludes that boards of education should recognize that medical men are the proper ones to advise as to the hygiene of schools, the physical fitness of the pupils for study, and the needs of the child at successive stages of its normal development, and asserts that even with the most perfect hygienic arrangements, there must still remain a certain amount of danger to the eyes during school life. The progressive deterioration of eyesight as a result of civilization is due to inherent and irresistible forces, but much

can be done by scientific and intelligent study to remove such evils as seem to be incidental to school life. Surely if education is regarded by governments or states as necessary, and its acquisition made obligatory, the eyesight, the chief means by which it is acquired, should be protected, and such protection should constitute the most fundamental part of the educational system.

The Trend of Tuberculosis of the Peritoneum to Spontaneous Cure.—Van de Warker says in the *International Journal of Surgery*: Attention is called to the fact that statistical data on this point is very meager, there being nothing in literature to correspond with the observations made by Loomis in regard to the spontaneous cure of pulmonary tuberculosis. The word cure is used in the sense of a limitation of the invasion and the metamorphosis of the tuberculous groups into new-formed products by incapsulation, calcification, with pigmentation, which are inert to near parts, but are potentially latent as to future result upon the normal tissue environment. Kaulich's classification is given in this disease. There are three groups. The first may be called the stage of invasion, advancing by a series of attacks with intervening lulls until the entire cavity of the peritoneum has been affected, without effusion, but with the retraction of the abdominal wall. In the second group there is insidious invasion without pyrexia, ascites appearing early. The third is the second group exhibiting the phenomenon of spontaneous amendment in active operation. A condition essential to this termination is that the lesion be confined to the peritoneum with no tendency for invasion of the lungs or pleura. The author says: "The question naturally offers itself whether this third group of the author is not a resultant from a prior grouping, but a condition modified from the beginning and having, *de novo*, a tendency to spontaneous cure. Argument is advanced to the point that the pulmonary is the region in which the life history of the bacillus attains its perfect fulfillment and that there is a stronger natural tendency to resist the extension of the disease in the peritoneal cavity. Applying the ratio shown in Loomis' reports to disease of the peritoneum fourteen per cent. of spontaneous cures would be expected. There is a maintenance of vital resistance as provided by the ingestion of large quantities of whisky and cod liver oil. A race virgin to the disease falls a much more apt prey to its ravages, those who have lived a long time in contact with it acquiring a modified immunity or increased ratio of exemption. Sex is given as having a modifying influence, peritoneal tuberculosis being more rare in the male than in the female, but more disastrous when it does so appear. Age has its bearing on the case.

**NORTHWESTERN LANCET.**

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**DECEMBER 15, 1899.****FAREWELL.**

With the deepest feeling of regret the junior editor announces that his connection with the Lancet ceases with the present issue. Only one cause would be sufficiently powerful to force him to this step, and that is the absolute impossibility of giving to the Lancet sufficient time to ensure its regular appearance.

It is not easy to break off an association of nearly fifteen years. During that time many friendships have been formed through these columns. The Lancet itself has greatly increased in size and influence and has made for itself a host of friends and well wishers, whose kind words and encouragement have done much to help the editor in his work. It is these friends from whom it is hardest of all to part.

Although the editor may no longer take an active part in its publication he will continue to have the warmest regard for and interest in the Northwestern Lancet, to whose editorial staff he can offer no more kindly wish than that the same good will that has attended the Lancet in the past may shine upon its path in the future.

**A JOURNAL FOR THE STATE MEDICAL SOCIETY.**

The editor of the Lancet having written the words that announce his retirement from medical journalism, feels himself in a position to speak impartially upon the question whether it will be advisable for the State Medical Society to publish its own medical journal, as is done by the British Medical Association, the American Medical Association, and several of the state medical societies in this country. The question was agitated at the last meeting of the Minnesota State Medical Society, and a committee was appointed to investigate and report upon the subject. This committee has met and has sent to the several medical journals of the state a circular letter asking for the proposal of terms upon which they would become the property of the State Medical Society.

It has occurred to many who are interested in the cause of medical journalism in the Northwest, that it would be well for all concerned if there were but one journal here where now there are four, with the prospect of a fifth should the State Medical Society decide to publish. Probably some of those who have advocated the State Society journal have expected that it would absorb the other four, and had this in mind in pushing the plan. So it would be an excellent thing if all the talent for medical writing that is to be found about here could be concentrated in the pages of one journal. There is enough material in Minnesota and the adjoining states to make an excellent journal, a weekly journal, such as this community ought to have, one that could publish medical news as well as medical literature. A monthly or semi-monthly journal cannot publish news, for some of the items will be at least thirty days old when they appear in print. The suggestion was made at the last meeting of the State Medical Society that it would be an inducement to the medical men of the state to join the State Society if a journal were offered them in return for the payment of dues. To be tempting, this offer should be a weekly journal, one that by containing all the medical literature and the medical news of the Northwest should serve to bring the members of the medical profession hereabouts into close and frequent communication with one another. To offer the members of the State Medical Society a monthly journal will be but to offer them the transactions

of the Society in twelve parts instead of in a single volume.

In order to make a success of the journal all the members of the Society must work for it, each man must feel that he is on the editorial staff. A single editor, no matter how talented, cannot make a journal successful if the mass of the medical community is lukewarm or indifferent, that is not successful as a true representative of the medical work of that community. A mere financial success will not be enough. It will probably be easy to run a journal backed by the Minnesota State Medical Society with its five hundred members, because advertisers will recognize it as a good medium for announcing their wares and it is the advertisements that support a journal. But the success that the Society is after, the making of a journal so attractive that it will serve as an inducement for physicians to join the Society, that can only be done by the hearty co-operation of all the members of the Society, by their giving freely to the journal the best products of their brains.

Now then, can the Society produce such a journal as will attract new members? Not if it has to share the medical literature of the Northwest with three or four other journals. It must buy these journals out or else run them out of existence. It cannot expect a journal with a net income, say of two thousand dollars a year, to make a present of itself to the State Medical Society, to turn over its business and editorial management to other hands without compensation. No doubt any of the present journals in the state will be ready to print the papers and proceedings of the Society, to act as its official organ, and for a consideration to put every member of the Society on its mailing list, but this is not what the Society is after. To run the present journals out of existence by competition is hopeless. Even should all the members of the State Medical Society withdraw their names from the subscription lists of the present journals, those journals would feel the loss but would be far from ruin. As has been said, a journal lives on its advertisements, and a journal with a good advertising connection will continue to pay as a business enterprise even though it loses many subscribers and has to fill its pages with second-hand matter in place of original contributions. Only gross mismanagement can kill a journal once well established.

The question then narrows itself down to this: Can the State Medical Society afford to buy out all or a part of the medical journals of the state and publish a good weekly that shall be to the State Medical Society, on a smaller scale, what their journals are to the American Medical Association, and to the British Medical Association? It is a question of ways and means. If the money can be raised the literary material is here and success is assured; but for a monthly with four competitors to share that material there is little encouragement.

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## REPORTS OF SOCIETIES.

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### MINNESOTA ACADEMY OF MEDICINE.

R. O. BEARD, M. D., Secretary.

Stated meeting Wednesday evening, Dec. 5, 1899, at the Hotel Ryan, St. Paul, the president, Dr. C. Eugene Riggs, in the chair.

Dr. A. Shimonek, of St. Paul, presented several specimens. The first was of a renal calculus, which had become wedged in the urethra and consequently necessitated an operation for its removal. The second was a number of gall stones removed from a case in which a circumscribed peritonitis of great intensity and marked by high temperature had occurred; upon operation two stones were found impacted in the cystic duct, their removal, with others in the gall bladder, being effected through the gall bladder, the patient making a good recovery. Third, he exhibited a uterus and appendages, removed post mortem in a case of extrauterine pregnancy attended by rupture, the patient dying under operation. This case had been diagnosed as one of incarcerated pregnant uterus; pending removal to the hospital hemorrhage and collapse had occurred. The specimen presented the alternative of a ruptured intra-ligamentous pregnancy or an abdominal impregnation. Fourth, he presented a large myomatous uterus, the removal of which had been followed by recovery.

The president-elect, Dr. C. Eugene Riggs, read his inaugural thesis, entitled "The Nutritional Factor in Nervous Conditions," of which the following is an abstract:

The fundamental unit of the organism is the cell. The cells most highly differentiated and possessing the greatest complexity of function are those of the nervous system. All somatic cells are subject to the same laws and alike are influenced by the same environment.

The brain may be regarded as an assemblage of centers; the spinal cord is also an aggregation

of centers and conductors. Nervous protoplasm has three essential characteristics: its power of repair, its ability to respond to external stimulus and its capacity for recording and reproducing the happenings occurring within it. The resistance power of each cell is determined by its individual history.

Idiocy, imbecility and degeneracy may be looked upon as so many indications of failing developmental energy; we may also assume that the degenerative nervous diseases are likewise evidences of initial defect.

By neurosis is understood the instability of a nervous system too delicate for its surroundings. Defective initial energy is the cause both of neurosis and the degenerative nervous diseases, the condition in any case depending upon the degree of defect and the individual environment. Where the initial defect is not too great much may be done to prevent destructive reaction on the part of the nervous system. Childhood is the period in which constructive metabolism should be employed, together with the initiation of correct methods of life and the repression of morbid tendencies. An excess of nitrogenous food should be avoided.

Neurasthenia is a much more serious condition than it is usually regarded, for the reason that it is the point of departure for the development of organic nervous disease. A healthy condition of the nerve cell depends upon an adequate amount of stimulus, a perfect adjustment between the supply of stimulus and the reparative power of the cell. In neurasthenia we have either an actual excess of stimuli or an impairment of the recuperative power of the cell, the result of toxic influences. The functional integrity of the cell can only be accomplished by the conservation of nervous energy, together with a nutritional upbuilding of the nervous system. The relation between nutrition and physiological rest is also most important.

The value of nutrition in structural diseases has not hitherto been sufficiently appreciated. Tabes is an impairment of the nutrition of the posterior root ganglia, usually due to syphilitic toxins. The restoration, therefore, of the nutritive integrity of the sensory neurone is the end to be kept in view. This is accomplished by regulating the output of nervous energy and by cell nutrition. Physiological rest and a nutritious diet will accomplish much in the betterment of tabetic conditions, and the prognosis of this disease has become much less gloomy.

The inverse relation between undue nervous activity and nutrition should be particularly kept in mind in degenerative conditions: a recognition of this fact will do much to retard and minimize an inevitable tendency.

Prevented nutrition is regarded by many representative alienists as the basis of the psychoses.

The changes in the blood vessels, in the amount of neuroglia, in the membranes; the degeneration in the nerve cells; the abnormalities and morbid changes in the skull are all looked upon as so many evidences of this theory. Nutrition is fundamental in the treatment of the insanities. Some psychiatrists believe that rest should be absolute; others combine it with moderate exercise; both methods of treatment should be employed if the best interests of the patient are to be considered, each case determining the course most suitable for itself.

The lack of appreciation of the value of careful alimentation in the psychoses often results in chronicity and degeneracy.

Dr. H. A. Tomlinson, of St. Peter, opened the discussion upon the thesis, which he complimented for its able discussion of a very large topic. Nerve tissue, he said, is peculiarly dependent upon other tissues for its nutrition, while, as the center of control for all forms of functional nutritive disturbance.

Referring to the comparison which Dr. Riggs had made between structural or developmental defects and acquired defects, he suggested that it is a mistake to use the term degeneration as descriptive of an accomplished change. It is rather a continually progressive change upon which no limit can be imposed.

Instability or defect of the nervous system reflects itself upon other functions and especially upon those of the vegetative organs, giving those disturbances of nutrition which we characterize as somatic. Among defectives the tendency is always to a reversion to lower types of function, the individual exhibiting the degeneration in mentally egotistic or morally disordered acts. The central idea of the paper should be emphasized that the nutrition of the nervous system depends upon the normal activity of other organs. In details of managements, his experience corresponded with that of Dr. Riggs.

Dr. R. O. Beard, of Minneapolis, said that the large subject which Dr. Riggs had so ably discussed was suggestive of many interesting lines of study.

It should be remembered, in considering the nutritional factor in nervous conditions, that the nerve tissues differ developmentally from all other tissues in that this development is always in the direction of growing complexity and not of increasing bulk. This highest degree of differentiation predicates the highest order of functional activity and accounts for the universal nutritive relationship between the nervous system and all other tissues to which Dr. Thomlinson had referred. The fact of the nutritional dependence of the nerve tissues is demonstrated by the facts of starvation, when the storage tissues, such as fat, or the storage organs, such as the liver and the

spleen will be depleted and even the structural elements of the muscular tissue and the blood will be drawn upon for the maintenance of the nutritive integrity of the nerve tissues.

Innutrition of the nervous system means, not loss of bulk, but loss of power; not deterioration in mass, but in stability. Instability shows itself in two directions: In a tendency to a too explosive response to stimulation in the nerve centers and in the breaking down of the lines of resistance along the paths of conduction. Measures for nutritional repair must take cognizance of these facts. Under such conditions the presence or the operation of too numerous or too urgent stimuli becomes of moment. The most common illustration of his hyperstimulation is seen in the pernicious influence upon these unstable nerve cells and broken down nerve-paths of toxins. By the establishment of a sort of vicious circle, the very innutrition of the nervous system itself results in the development of toxins of two forms and from two directions. The one type appears in the intestinal tract, as the product of a disordered digestion, due to the failure of innervation, and resulting, particularly, from the decomposition of the proteid stuffs; the other type develops in the nerve tissues themselves, as results of their own degeneration—than which no more actively toxic products are formed within the animal organism. In their turn, these toxins act as the too violent and too frequently active stimuli of the unstable nerve tissues.

Dr. Riggs had wisely emphasized the principle of rest in the treatment of these nutritional disorders and in its application it should extend to the removal or abatement of these rest-disturbing toxins, and to the selection of a careful diet, not of specifically nerve foods, of which we know nothing, but of simple and easily digested food. In such a diet the proteids should be minimized, not only on account of their liability to intestinal decomposition in such cases, but because they serve as stimulators of a metabolism which already of too active a type.

Dr. John T. Rogers, of St. Paul, presented a paper upon "Extrauterine Pregnancy," accompanied by specimens.

Dr. J. L. Rothrock, of St. Paul, opened the discussion upon the paper. He said that he had examined microscopic sections of the walls of the sac in the specimen presented by Dr. Rogers and had found them to contain smooth muscle fibre. He thought the case one either of interstitial pregnancy or of pregnancy occurring in a rudimentary horn of the uterus. Unless the relations are very closely studied at the time of the removal of the foetus, he thought it very difficult to determine between these two varieties. It is well known that interstitial cases tend to rupture by the fourth or fifth month, although exceptional cases of long carriage of the foetus, even up to

sixteen months, have been recorded. While this case, therefore, is not a common one, it is not unique in surgery. Regarding the method of occurrence of such cases, he had been interested in studying their classification by a French surgeon, as early as 1836, into four groups, one of which he had termed "intra-mural" and had attributed it to a separation of the muscle-fibres in the uterine wall, permitting the intra-mural inclusion of the impregnated ovum, the sac of which subsequently protrudes externally and is attached by an irregular pedicle, the exact point of departure of which it is difficult to determine. He thought that these cases continually demonstrate to our minds the endless varieties of extrauterine pregnancy which are possible.

Dr. A. Shimonek, of St. Paul, said that some of these cases of abdominal pregnancy, which come to full term, are disposed of by nature in various ways. The foetus may become encapsulated and degenerate into a calcareous mass, which may be carried for a life-time. Such encapsulated masses may break down, lead to suppuration, and be discharged through various channels. He had seen, several years ago, a suppurative case of this kind, in which portions of the mass were discharged over a long period of time with the eventual recovery of the patient. Such masses, again, may become so adherent as to make them impossible of removal.

The etiology of extrauterine pregnancy remained of the greatest interest. He dissented from the view that they are due to destruction of the cilia of the Fallopian tubes. Anything which tends to obliteration of the lumen of the tube is likely to interfere with the descent of the ovum. The muscular element in the activity of the tube is probably more important in causation than the cilia. Congenital deformities of the tube, leading to the development of sacculae, in which the ovum may be detained, are a likely cause.

Cases of intra-ligamentous rupture of the sac in extrauterine pregnancy are the least dangerous, he said, and are often spontaneously recoverable. Rupture of the sac into the free peritoneal cavity is, of course, the most fatal. He questioned the principle that cases should be operated early and before rupture. A positive diagnosis before rupture is often too difficult a matter.

Dr. Rogers, in closing, referred to Tait's views of the etiology of these cases as primarily consequent upon inflammatory changes. Later the peristaltic failure had been discussed. He believed it an agency in some instances. In his twenty-eight cases of extrauterine pregnancy recorded, he had not discovered a single diverticulum of the tube. Further, since all diverticula of musculo-membranous tubes have the same structural qualities as the remainder of the tube from which they spring, the cilia and muscular elements in these cases being present in

them, he could not see why an ovum is not as possible of expulsion from such a part of the tube as from any other. If inflammatory conditions have preceded he could well understand that the existence of such a diverticulum would complicate a case. He was quite confident that the case reported was one of interstitial pregnancy. All its relations suggested the fact.

He did not believe that it is always possible to make a positive diagnosis of extrauterine pregnancy before rupture, but sometimes it can be done and, if done, operation should not be postponed. It was unfortunately too seldom that the opportunity for pre-diagnosis presents itself.

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## BOOK NOTICES.

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An American Text-Book of Surgery. By Numerous Authors. Edited by William W. Keen, M. D., LL. D., and J. William White, M. D., Ph. D. Third edition. Thoroughly Revised Philadelphia: W. B. Saunders. 1899. [Price, \$7.00 net].

As a gratifying evidence of the success and popularity of the American Text-Book of Surgery, the authors announce that it has already reached a sale of nearly 29,000 copies and has been introduced as a text-book into over 100 medical colleges. The changes in the third edition have been mainly in the way of additions of articles upon special subjects, as lumbar puncture, the use of hot air, the use of gloves, etc. There is also a very striking colored plate showing specimens of appendices removed by operation.

Loveliness. A Story. By Elizabeth Stuart Phelps. Boston: Houghton, Mifflin & Co. 1899. [Price, \$1.00].

A touching story of how the pet dog of an invalid child is stolen and sold to the physiological laboratory of a medical school; how its mistress pines with grief at its loss and how the dog is finally rescued from under the knife of the vivisector.

No one who is fond of children and dogs could fail to be moved by the tale that Miss Phelps has so charmingly told, and there is no class of men that goes beyond the doctors in its fondness for children and dogs; there is no class of men that is kinder to animals and more opposed to wanton and needless cruelty.

But doctors will not draw from this story the moral which it is evidently Miss Phelps' object to point out, that is that vivisection is wrong and should be suppressed. They will admit that needless cruelty is wrong wherever it is found and they will join with Miss Phelps in a crusade against it, whether it be found in the experimental laboratory or elsewhere. But they feel aggrieved when the sentimental writer aids in the attempt

of the anti-vivisectionist to put such restriction upon experiments upon animals as to threaten altogether to put an end to that branch of scientific study. For most of the experiments with living animals are not cruel, though a few unhappily are.

The story tells how the little pet dog was found strapped upon a table, the vivisector standing over him with knife in hand about to make the first cut. It is touching to read of the dog licking the hand that is about to hurt him. But the little fellow's friends are at hand and burst into the room in time to save him. The writer of this notice knew a family that once made a pet of a little pig, and a very nice pet he made, intelligent, affectionate and beautifully clean, for pigs are clean by nature. He had all the best qualities of the best house dog, but unfortunately he grew, grew to such vast proportions that it became impossible to keep him about the house as a pet any longer, and the stern decree went forth that he must go the way of all pigs and become pork. The family went into mourning, the pig went to the butcher, the knife went into the pig's throat and amid those fearful squeals and screams with which every country boy is familiar, the poor pet's life came to a slow, bloody and painful end. Alas, there was no one at hand to break in the doors in the name of the law and stop the execution. Now if the story of the pet dog's narrow escape arouses feelings of abhorrence of the vivisector, why should not the story of the pet pig's torture arouse similar feelings against the butcher? If it is wrong to put a dog to a painful death that man may learn is it not equally wrong to make the pig suffer that man may eat? Is it that the appetite for pork is nobler than the appetite for knowledge so that the one act of cruelty is to be condoned and the other condemned? So it would appear, else why is so much heard about anti-vivisection societies while no one ever heard of an anti-pig-sticking society?

The obvious answer to this is that two wrongs do not make a right, that to permit the torture of the pig does not justify the torture of the dog. Granted; but the point of the illustration is to show the one-sidedness and unfairness of a crusade against a single form of cruelty, when other forms of cruelty quite as gross, much more obvious and much less justifiable are passed by. Let there be most stringent laws against cruelty, let the penalties be heavy and the enforcement stern; no class of citizens will surpass the doctor in the support of such laws; none will rejoice more keenly in the punishment of offenders, even should the culprits be found in the ranks of the medical profession. Only let these laws be general, against all forms of cruelty, not special and directed alone against cruelty that may be practised in the laboratories of experimental physiology and surgery. Let the courts rather than the

sentimentalists decide what forms of inflicting pain are needless and cruel and what are unavoidable and necessary. And the medical profession will bow down in submission should the courts decree that it is right and proper, humanely speaking, to boil crabs and lobsters alive to improve their flavor or to bleed pigs and calves slowly to death in order that pork and veal may be temptingly white, but wrong and cruel to cut open a dog in order that the surgeon may learn how to save human life and to prevent human suffering.

Text Book of Embryology for Students of Medicine. By John Clement Heisler, M. D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. Illustrated. Philadelphia: W. B. Saunders, 1899. [Price, \$2.50, net.]

The student will find that this book makes the difficult subject of embryology as easy as it can be made by dealing with it plainly and clearly without going into all the minutiae. The student needs a work specially written for him, consisting rather of an outline of embryology than an account of all that has been revealed by the patient investigations of those who have made this branch of medical science their life work.

Dr. Heisler has succeeded well in picking out the things that it is essential for the student to know, and in describing them so clearly that they may be readily comprehended.

Text-Book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of the Practice of Medicine and of Clinical Medicine in the Medico-Chirurgical College, Philadelphia; etc. Illustrated. Third Edition, Revised. Philadelphia: W. B. Saunders, 1899. [Price, \$5.50 net.]

Those who are familiar with the former editions of this work will find that many changes have now been made, whole chapters entirely rewritten and others revised in order to bring the work fully abreast of the times.

No one can fail to be pleased with the way in which the book is written. Its descriptions of diseases are full and complete without going into unnecessary and elaborate details, and it contains many original observations derived from the author's extended experience.

The Surgical Diseases of the Genito-Urinary Tract. By G. Frank Lydston, M. D., Professor of the Surgical Diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the University of Illinois; etc. Illustrated. Philadelphia, New York, Chicago: The F. A. Davis Company, 1899. [Price \$5.00.]

The originality of Dr. Lydston's views and the boldness with which they are stated have been very evident in his frequent contributions to medical literature. In this volume, which is a

comprehensive treatise, those views are reiterated and indeed frankly acknowledged by the author in the preface as "a few heresies of my own." Whether the reader believes that these heresies deserve to be encouraged or not he must at least admit that they are worth reading and that it is refreshing to find a book with so much of freshness and originality about it.

A Practical Treatise on Materia Medica and Therapeutics. By Roberts Bartholow, M.-A., M. D., LL. D., Professor Emeritus of Materia Medica, General Therapeutics and Hygiene, in the Jefferson Medical College of Philadelphia; etc. Tenth Edition, Revised and Enlarged. New York: D. Appleton and Company, 1899. [For sale by the St. Paul Book and Stationery Company. Price, \$5.00].

There is little that can be said for the first time in writing a notice of the tenth edition of a book; the other editions must have absorbed all ordinary and obvious comments. But about Bartholow's therapeutics it is fair to be enthusiastic even at the risk of repetition, as enthusiastic as the author himself is in his descriptions of drugs and as enthusiastic as the student ever is in reading of what may be done by the proper use of remedies. In company with Gray's Anatomy, Playfair's Midwifery and Holmes' Surgery this book is to go down to future generations of medical students and practitioners as a classic.

Progressive Medicine, Edited by Hobart Amory Hare, M. D., Professor of Materia Medica and Therapeutics in the Jefferson Medical College of Philadelphia; etc. Volume IV. Philadelphia and New York: Lea Brothers & Co., 1899.

The December volume of Progressive Medicine completes the first year of the work, which has been highly successful, giving a most satisfactory account of the recent discoveries in those medical subjects of which it treats.

The present volume deals with diseases of the digestive tract; genito-urinary diseases in the male, and syphilis; fractures; dislocations; amputations; surgery of the extremities and orthopaedics; diseases of the kidneys.

A Manual of the Diagnosis and Treatment of the Diseases of the Eye. By Edward Jackson, A. M., M. D., Emeritus Professor of the Diseases of the Eye in the Philadelphia Polyclinic; etc. Illustrated. Philadelphia. W. B. Saunders, 1899. [Price, \$2.50 net.]

The student, the general practitioner and the beginner in the study of ophthalmology will find in this manual all that they will ordinarily have occasion to use in the way of information about the eye and its diseases. Those who wish to sound the greatest depths of this branch of science will naturally seek the more elaborate



treatise. With a view to adapting the book particularly to the needs of the general practitioner, the author has devoted one chapter to a consideration of the relation between the condition of the eye and general diseases.

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## NOTES.

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### Accidental Wounds of the Female Bladder.

BY FREDERICK HOLME WIGGIN, M. D.

New York City.

Presented to the Section of Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

(Abstract from the Journal of the American Medical Association, of Sept. 9, 1899.)

Accidental opening of the bladder has, for many years, been considered one of the most serious accidents that could occur in the course of the complicated work which gynecic surgeons are often called on to perform. The following case is offered in illustration of this type of injury:

M. H., unmarried, age 41, was admitted to the City Hospital, N. Y., Sept. 30, 1898, suffering from a large myoma, which sprung from the anterior uterine wall and extended above the umbilicus. On Oct. 3, the abdomen was opened, and the tumor, which weighed seventeen pounds, was removed, together with the body of the uterus amputated near the internal os. As hemorrhage was profuse it became necessary to remove the mass very rapidly, to accomplish which the anterior attachment of the tumor was clamped and cut, when it was discovered, from the escape of urine, that the bladder had been opened near the fundus.

The general cavity had previously been shut off with gauze pads and thoroughly irrigated, followed by the use of Hydrozone in half strength and this, in turn, by saline solution. The gauze pads were now changed, and the opening in the bladder, four inches in length, was closed by means of two layers of chromicized catgut sutures. The wound was then disinfected, and there being a large peritoneal flap, it was attached to the bladder and made to cover the line of sutures, thus making the bladder-wound extra peritoneal. After further washing out of the abdominal cavity with Hydrozone and the saline solution the external wound was closed, without drainage, and the usual dressings applied. The patient being feeble it was not thought advisable to make a vesico vaginal fistula to drain the bladder, but, instead, a self-retaining catheter was introduced. At the end of ten days, however, tumefaction occurred over the lower angle of the abdominal wound, and, on opening it, urine be-

gan to escape. A vesico vaginal fistula was now made in order to afford adequate drainage. The sinus in the abdominal wall was curetted and, after being thoroughly disinfected with Hydrozone, its walls were sutured. Soon afterward, the sinus having closed, the sutures which kept open the vesico vaginal fistula were removed, and the latter closed quickly without any further operative interference.

Percival (in British Medical Journal, 1897, Vol. 1, p. 1282) reports a case of ruptured bladder on which he had operated. It was closed by means of a double wall of Lembert silk sutures. The wound in the abdominal wall was closed, after the peritoneal cavity had been flushed out with boric acid solution and a large quantity of clots and urinous fluids had been removed. For a few days the patient did well, and then died from peritonitis. But the necropsy proved that the bladder wound had completely healed. It is the writer's opinion that had saline solution and Hydrozone been used, instead of boric acid, and the abdominal wound been closed leaving saline solution in the peritoneal cavity the patient would probably have recovered.

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### Nordrach at Home.

Physicians all over the world are now talking and writing about a noted sanitarium in the Black Forest, Switzerland, for the special treatment of consumption, known as the Nordrach cure.

Here Dr. Walthers and his assistants carry out the treatment upon the modern ideas of rest, out of door life, proper feeding and required medication, and the results are wonderfully encouraging, between 70 per cent and 80 per cent of cures in cases not too long neglected.

What a contrast to the old methods of treatment, employed 50 years ago, when nearly every case of consumption ended sooner or later at the grave.

A physician who has lately spent some time in this sanitarium studying these modern methods of treatment, says that wonderful results may be obtained at home with the Nordrach cure.

Proper exercise in a pure atmosphere, generous diet, which should include regular doses of Scott's Emulsion of Cod Liver Oil, an out of door life, and plenty of sleep in rooms with the windows open, invariably bring about the desired result.

Too much reliance cannot be placed upon this Emulsion of Cod Liver Oil. It contains the best quality of oil in a finely emulsified condition; it does not separate, and as it is purely mechanical, no change takes place after bottling. It has great medicinal, as well as food value, as has been proven many times during the past quarter of a century.

Scott's Emulsion, pure air, rest and graduated exercise properly adjusted bring about a marked change; strength and vigor return, the Tubercle Bacille are expelled, and flesh and appetite regained and health restored.

Try this treatment on your next case of consumption in the first stages.

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#### More Honors.

Purity of materials, with consequent therapeutic superiority, and perfection in manufacture have gained for Messrs. William R. Warner & Co.'s products many medals in all parts of the world. The last of such honors was recently awarded them at the National Export Exposition of Philadelphia, in the form of a silver medal and diploma, being the highest award made by the exposition.

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#### Two New Remedies.

Carrying out the principle of open pharmacy with which their house has been so long and so honorably associated, Parke, Davis & Co. make known the formulas of two important new preparations they have lately put on the market. One is a hypnotic and anesthetic called Chloretone, and the other an irrigant for gonorrhoea, to which the name of Mercuriol has been given.

Chloretone is formed when caustic potash is slowly added to equal weights of chloroform and acetone, and may be isolated from this mixture, after the removal of any excess of acetone and chloroform, by distilling with steam. Obtained in this manner, it is a white crystalline compound, having a camphoraceous odor. When freed from water by melting, and allowing to cool, the camphoraceous odor is more pronounced, and its general appearance resembles camphor more closely. It is made up for use both in crystals and in three grain tablets. For insomnia the usual dose is three of these tablets, and it is customary to prescribe a draught of hot soda or similar beverage as a diluent. Chloretone has also been found useful as a local anesthetic, and as it has analgesic and antiseptic properties, it can also be employed to relieve pain and as a dressing for wounds. As a hypnotic its great advantage is that it does not depress the action of the heart, as coal-tar products are apt to do, and on the other hand has none of that tendency to derange the digestive organs which is commonly associated with the opium group of remedies for insomnia.

Mercuriol derives its name from the fact that it is a combination of mercury and nucleol. It is a very powerful germicide, and yet does not produce any irritating effect on the mucous membrane. Dr. Frederick Fraley, Jun., of Phila-

delphia, lately conducted a series of experiments with the irrigant, and the results he summarizes as follows: Cured, six, out of a total of fourteen cases, or 43 per cent. in less than four weeks; practically cured, three, or 21 per cent., in three weeks; distinctly improved, three, or 21 per cent., in sixteen days; not improved, two, both of which it is explained were temporarily much benefited, but presented complications which caused other remedies to be used as supplementary treatment. Professor Ramon Guiteras, of the New York Post-Graduate Hospital, has been using the remedy with equally good results both in his clinics and private practice.

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#### Survival of the Fittest.

The experience of many of the best men of the profession, not only of the United States but abroad, has established the clinical value of antikamnia. Among those who have paid high tributes to its value and who occupy positions of great eminence, may be mentioned Dr. J. Acheson Wilkin and Dr. R. J. Blackham, practitioners of London. They have found it of value in the neuralgias and nervous headaches, resulting from over-work and prolonged mental strain, paroxysmal attacks of sciatica, brow-ague, painful menstruation, la grippe and allied conditions. Indeed the practitioner who has such cases as the latter come under his observation, who attempts their relief by opiates and stronger drugs, when so efficient an agent can be used, which is much less harmful, commits a grave error.

Experience goes to prove that ten grain doses of antikamnia in an ounce of sherry wine, taken every two to four hours, will carry the patient through these painful periods with great satisfaction.—Medical Reprints, London, Eng.

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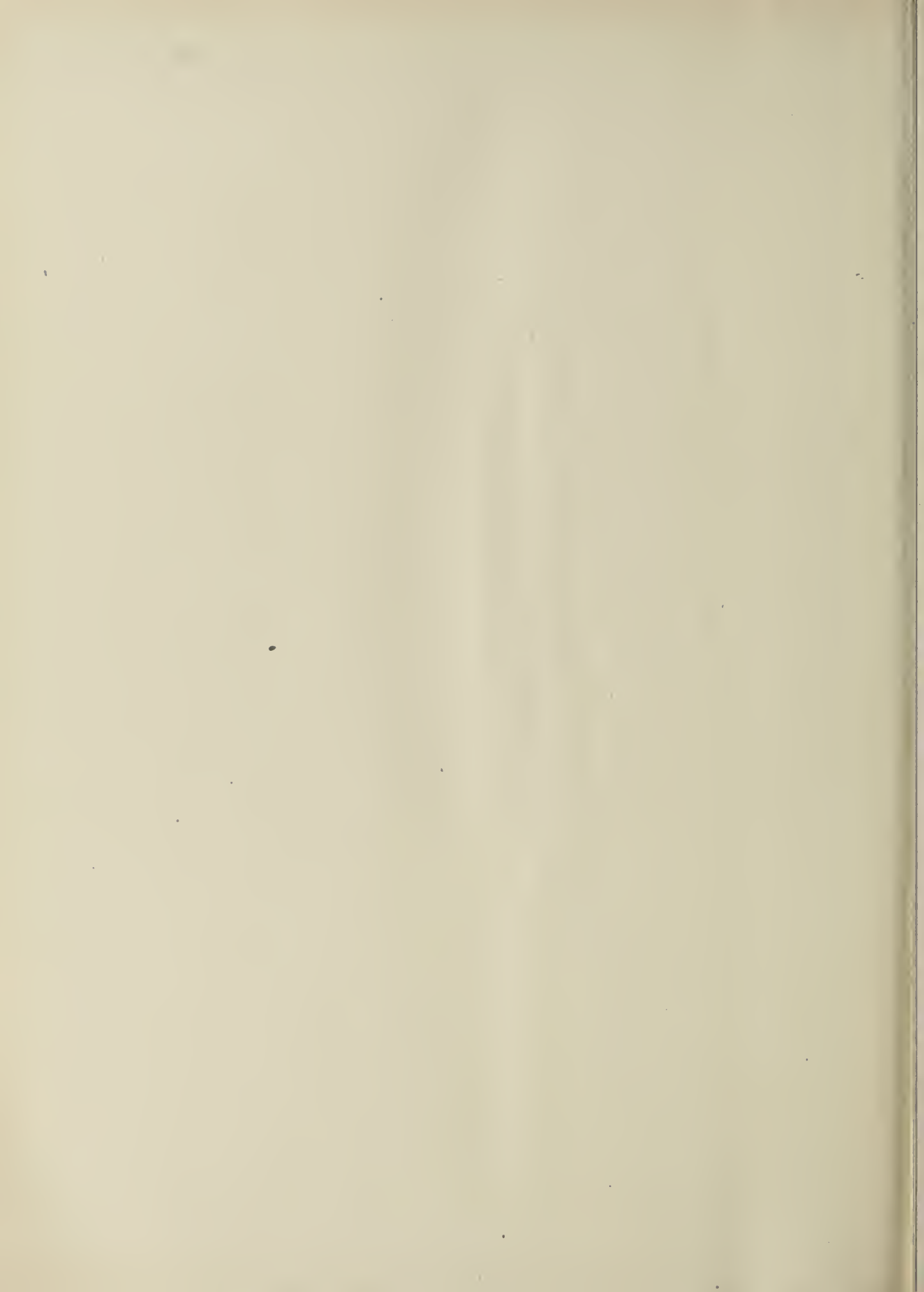
#### A Handsome Paper Weight.

The Dios Chemical Co., of St. Louis, Mo., manufacturers of the Standard Remedies Diovinburnia (Uterine Tonic); Neurosine (Neurotic); Sennine (Antiseptic Dry Dressing); Palpebrine (External Eye Disaases); will mail to physicians free of charge their new combination paper weight and mirror on receipt of 10 cents to pay postage.

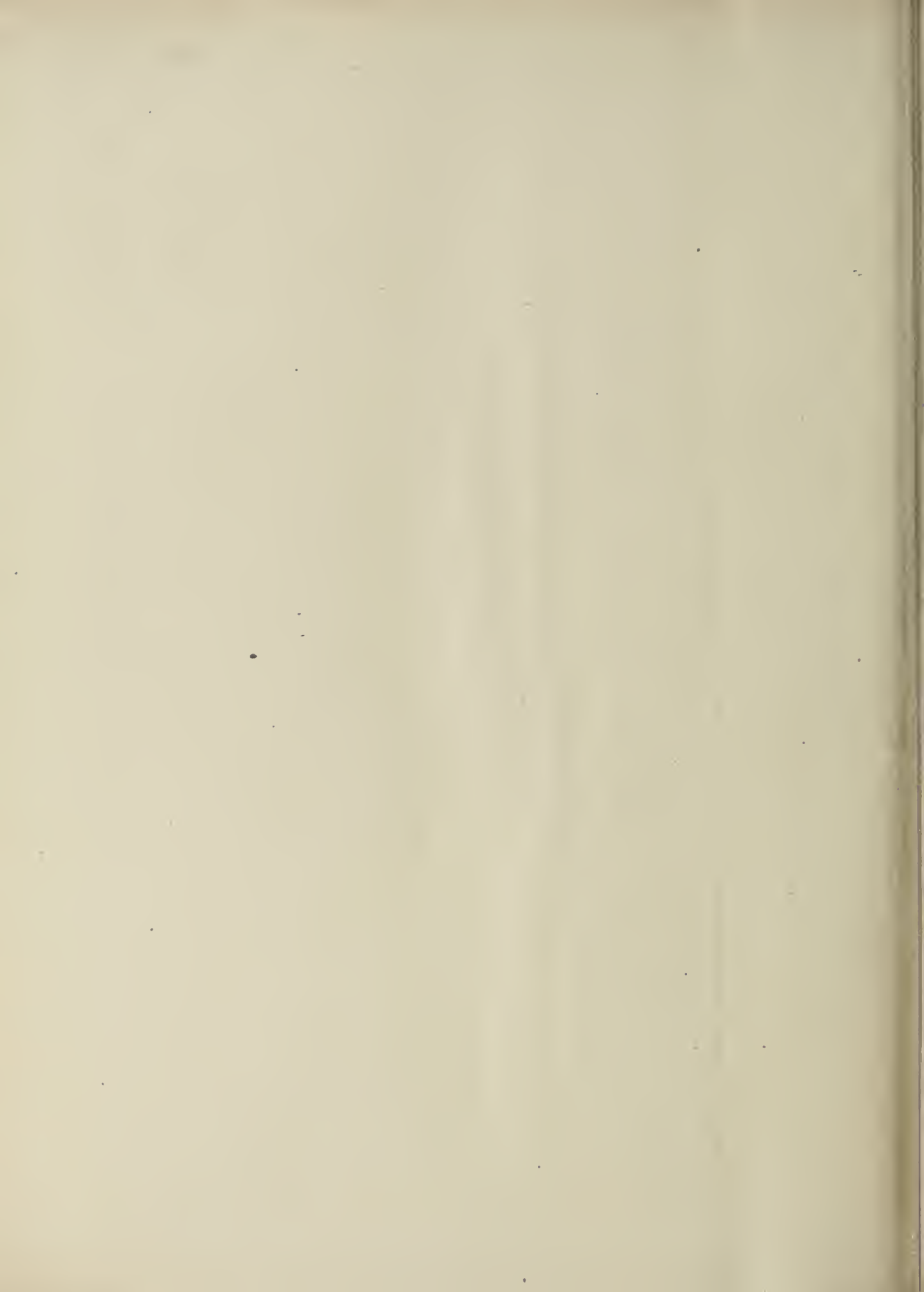
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The aseptic and astringent action of Micajah's Medicated Merine Wafers in the treatment of nasal catarrh is most gratifying. A solution in the proportion of one wafer to four ounces of water forms an excellent antiseptic and astringent fluid, while in affections of the throat, as tonsillitis, stronger solutions, as one, two or three wafers to the ounce, are equally useful. On request, Micajah & Co., Warren, Pa., will send sample and literature.

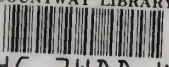








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