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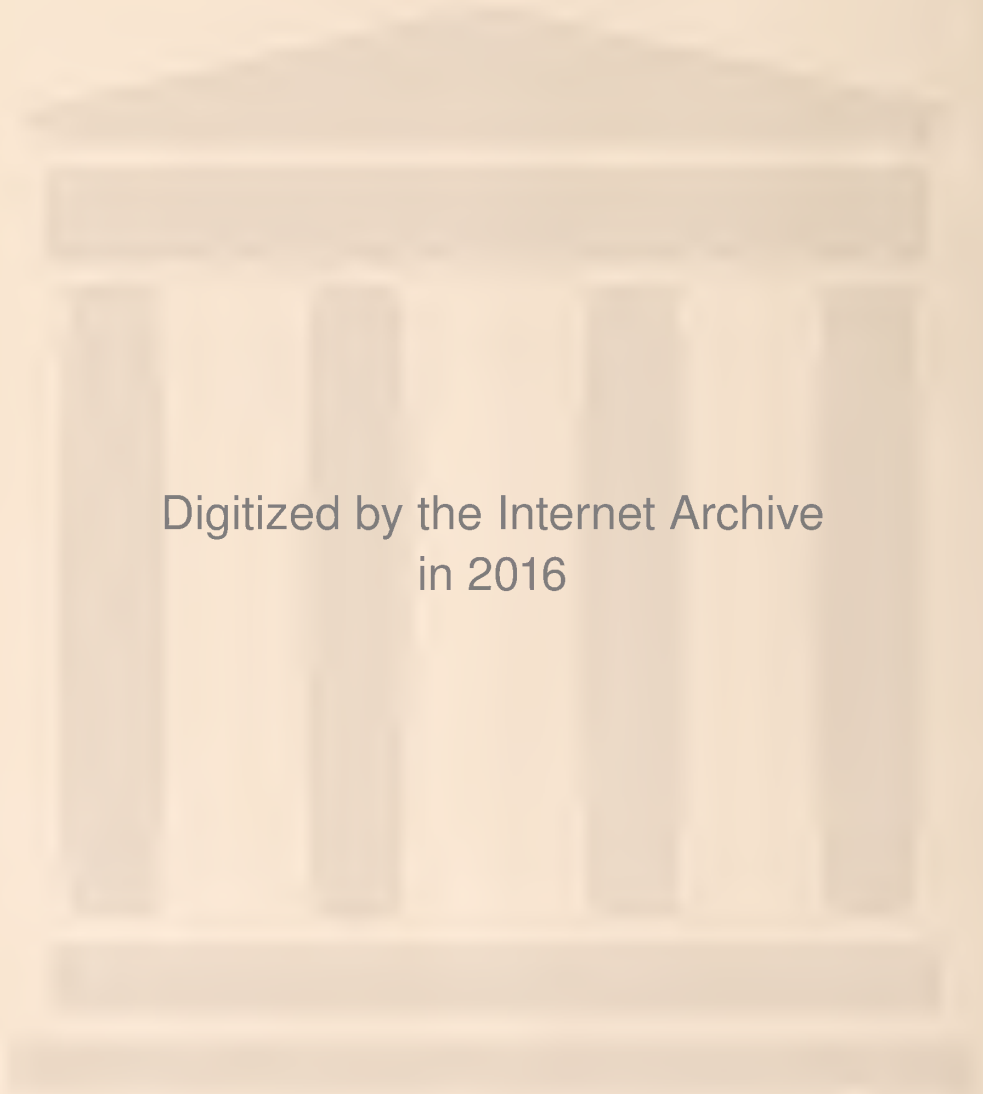


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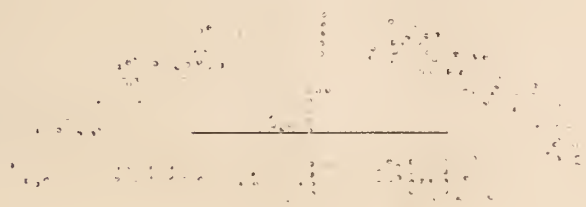
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TUBERCULAR KIDNEY DISEASE*

By M. C. MILLET, M. D.

ROCHESTER, MINN.

The advent of diagnostic instruments of precision has made the diagnosis of renal tuberculosis more certain and frequent. This can be aptly demonstrated from the records of St. Mary's Hospital, Rochester, Minn. During the years from 1890 to 1900 the proportion was one tubercular kidney case in 1,600 cases admitted; in the years from 1900 to 1905 the proportion was one in 350. During the different periods the same men were making the diagnosis, and the class of patients was practically unchanging. Parenthetically, however, it may be stated that the diagnosis was made in a few instances in which operation was refused by the patient. Two such cases returned four and six years later, and accepted operation, both with a functionless kidney, and one with the addition of a perinephritic abscess. We may safely ascribe this increasing frequency, therefore, to a more perfect clinical examination, and that means the employment of more perfect instruments. As a result of the increased frequency of diagnosis it must follow that there will be an increasing number in which the diagnosis is being made early. Where methods are at all similar, the experience of one institution must compare relatively with others.

The statistics of renal tuberculosis, until recent years, have been derived from post-mortem findings, supplemented by isolated rec-

ords of surgical intervention. Being end findings these statistics presented a high percentage of bilateral disease and tubercular foci in other organs. These records presented the sum total of what tuberculosis was able to do, as evidenced by the fact that the subjects were dead. Undoubtedly, it would seem that some time previous to death conditions might have been very different. This knowledge, derived from dead subjects, led to a grave prognosis, offering to the patient with renal tuberculosis the rather doubtful encouragement of fresh air and cod liver oil.

The profession, however, was not slow in realizing that surgical intervention, which removed certain foci, decreased the load on the patient's resistance, and made more probable the curing of other and, perhaps, inaccessible lesions. This line of reasoning has led, in recent years to many successful operations which, 15 years ago, would have been regarded as of doubtful expediency.

Of the 35 cases operated upon in St. Mary's Hospital, it is of interest to note that in only two was the disease bilateral. In six of these cases the records are incomplete, and for the purpose of accuracy only those which were proven, viz., 9, will be referred to as the series. Of the 27 cases of unilateral disease, nephrectomy was performed 25 times, with the immediate result of 23

*Read before the Minnesota State Medical Association, June 1, 1905.

recoveries and 2 deaths. Death resulted from pneumonia 21 days after operation in one case, and in the other from a streptococcus infection derived from the severed open end of the ureter.

A review of the histories of these cases demonstrates one symptom only, prominent and present in all, viz., a day and night frequency of micturition. This symptom is usually the first one mentioned by the patient, and many times is the only one complained of. Ordinary pus in the urine will not produce such a persistent nocturnal frequency of micturition. In addition to the frequency, various descriptive terms relating to the act itself, such as burning, smarting, painful, etc., appear in about 65 per cent of the cases. Actual pain or tenesmus almost certainly indicates bladder involvement, and frequently it may be elicited that these symptoms have developed some considerable time after the beginning of the frequent micturition. When such evidence is obtainable, it goes far toward proving a bladder involvement which is secondary to some other lesion.

A certain number (five in this series) will complain of distinct attacks of frequent micturition. These attacks, however, last from several days to weeks or months, to be followed by relief, perhaps for months—in one case for two years. One case presented a history of such attacks for ten years. During this time the only symptom had been these attacks of frequent micturition, except that during the six months just previous to examination there had been added pain and tenesmus, with occasional passing of small amounts of bright blood. Bladder examination demonstrated multiple hyperemic spots, a few of which were beginning to break down, or actual ulcers. The kidney, after nephrectomy, presented, in addition to the abscess pockets and caseating tubercles commonly found, healed or cicatrized areas. Each cicatrix represented a former abscess, and the abscess had produced an attack of frequent micturition, which had lasted until the discharge of pus had ceased.

Tuberculosis in fixed tissues is prone to be painless. Renal tuberculosis is no exception. When pain is present it is due to some accident or complication, rather than to the disease itself. The sudden acute attack, lasting from a few minutes to a few hours, is due most commonly

to a blood clot or particle of caseating material which produces obstruction and kidney distension, in short, renal colic. The dull, aching soreness in the loin signifies mixed infection and chronic interference with kidney drainage; rarely this sort of pain indicates rupture of a kidney focus and the resulting formation of a perinephritic abscess. The cause of the chronic obstruction may often be demonstrated to be a thick walled ureter which has lost its power of peristaltic contraction. Such an ureter will be seen to discharge its contents into the bladder, not with a rush or swirl, but slowly, dependent upon the degree of pressure in the distorted kidney pelvis. There may be little or no urine, and the pus can be seen to slowly creep out of the uterer as a putty-like mold or ureteral cast.

Thirty-eight per cent of this series had no pain at any time referable to the kidney or ureter.

The urine findings have been fairly uniform, viz., blood and pus in varying amounts and the presence of tubercular bacilli. A small number will have urine which is macroscopically clear. In one case the ureteral urine was clear, and, after prolonged centrifuging only three pus cells could be found, and still the bacilli were found on the same slide. Failure to find the bacilli may be due to faulty laboratory technic or lack of persistence in searching. A mechanical stage on the microscope which makes systematic search of all parts of the preparation possible will often bring success where otherwise a failure might have been recorded. In this series of 29 cases the bacilli were not found in eight; 4 of these, however, had associated with the tubercular process small calculi, and in 3 of these 4 the true condition was unsuspected, and the bacilli not searched for.

Hematuria is usually present, though often the blood is only microscopical in amount. The gross hematuria occurs in quite distinct attacks which last from a day to several days. In one case of double disease, in which exploration only was done, the hematuria persisted until death. In this series the periodic attacks of hematuria do not necessarily indicate an ulcerated kidney pelvis. In fact, most of such cases showed extensive and general cortical involvement, with often a clean pelvis; and some of the worst cases of involvement of the kidney pelvis never had a gross hematuria.

The cases in which cultures have been made from the urine have demonstrated, uniformly, a secondary infection. This infection, in most instances, has been a colon bacillus, though in one case it was streptococcus. It would seem to be a wise precaution to make cultures from all cases. Had it been done in the case which died from streptococcus infection, the unfortunate result might have been avoided. When, however, the surgeon, in his operative technic, treats all cases as though they were known to have secondary infection of streptococcus, culturing of the urine becomes of secondary importance.

The physical examination of the patient with suspected renal tuberculosis may be conveniently divided into two stages: 1. The general physical examination during which the important data to be noted will be the physical condition, the presence or absence of localizing signs, such as tumor or tenderness in the kidney region, and especially the presence or absence of other tubercular foci. The second step is the examination of the local conditions and, as frequently instrumentation is to be avoided, should only be undertaken when there is sufficient time to complete it at a single sitting.

Ordinarily, the cystoscopic examination should be the first undertaken. Many times signs will be encountered which indicate the diseased kidney as well as the condition of the bladder and fellow kidney. Cloudy urine or thick, ropy pus may be seen to discharge from one ureter, while from the other the urine may be clear. The ureteral meatus on the one side may be swollen and everted and surrounded by an area of red, thick-looking mucous membrane, while the opposite side may be normal. Other signs indicating which of the kidneys is involved are localized hyperemic spots, confined to one side of the bladder. These spots may be many or few, large or small, but always they are clear-cut and surrounded by healthy mucous membrane. When actual ulceration has developed, it is rare to find the lesions confined to one side, though occasionally it may be demonstrated that one half of the bladder is much worse than the other. When any of the above evidence is obtainable, a catheter may be passed into the ureter of the affected kidney, the bladder thoroughly irrigated, and a fair sample of the

urine from the other kidney may be obtained, without even a remote chance of infecting a supposed sound kidney by double catheterization.

Failure to locate the diseased kidney by means of the cystoscope will lead to the employment of some form of intravesical separator. The Harris segregator will uniformly give positive results if there be little or no kidney or bladder disease, and occasionally, with extensive bladder involvement, clean urine may be received from the sound kidney. The Cathelin instrument, or Leuy's intravesical separator, which adapts itself to the size of the bladder, may prove serviceable in a contracted bladder. Every reasonable effort should be made to secure clean urine from the supposed sound kidney. From the great variety of conditions met with, occasional failures must be recorded. In this series of 29 cases there were 6 unsatisfactory results, that is, blood or pus from both sides; 2 of these, however, proved upon exploration, to be double disease.

A given case may present tuberculosis urine and a tumor in the kidney region. Cystoscopy may indicate a practically functionless organ. The general health of the patient may be good or improving from a former condition of acute ill health, and the clinical history may indicate that the present conditions have existed for months. Freedom from septic and uremic symptoms is practical evidence that the supposed healthy kidney is healthy; and failure to secure clean urine in such a case might well be disregarded. This is not a supposititious case, but one that may be met with often. In fact, all of the first 15 cases in this series presented tumor.

Chills, fever, night-sweats, anemia, and emaciation are the gross signs, and usually mark the beginning of the end. Such cases, when accepted for operation, must furnish a large percentage of the death-rate. One of the two deaths in this series was of this class. In such cases complete removal of the pus sac, or what was once a kidney, is indicated, and will usually secure rapid improvement in general health and prompt relief from local suffering. The removal of the dead or functionless organ, when even the fellow kidney is under suspicion of involvement, is followed by, at least, temporary benefit and relief from suffering.

Relief of bladder symptoms following nephrectomy is prompt and certain in all cases in which there is no bladder disease. Cases in which there are simple hyperemic spots on the bladder mucosa will recover more slowly. If these spots are confined to the affected side, recovery is more prompt. When actual ulceration and contraction of the bladder wall has developed, relief from symptoms is doubtful, though occasionally a symptomatic cure may be effected.

A source for the kidney infection should be searched for, though most often none can be found. In two only of this series there was tubercular epididymitis, and in these it was impossible to determine which was the primary infection. A knowledge of the mode of infection, whether by the blood-stream, retrograde process, or by extension from the neighboring organs, is of little value to the clinician, except to prevent the overlooking of other removable lesions.

From the nature of tubercular lesions in other organs, we might expect occasional cure of tubercular foci in the kidney by hygienic measures. To this end operation might properly be delayed in the acute infection, the case in the meanwhile being kept under observation. Progressive loss of kidney function and signs of bladder involvement should be indications for surgical intervention. If all cases were to be diagnosed and operated upon early, the results would probably compare favorably with those of the present day. A certain percentage of the acute cases will have a low resistance, and the kidney manifestations are but the local signs of disease which, in a few weeks, may be demonstrated in various other organs. In several instances operations has been advised against solely on these grounds. Harboring the disease for months or years, and being able to localize, more or less perfectly, speaks well for the individual resistance (limited immunity). The gradual destruction of kidney tissue in the one is being as gradually compensated for by hypertrophy of the other. Before the diseased kidney becomes a drag on the work of its fellow, and before disease has developed, its removal is indicated. When to operate and when not to must be mainly determined by the manifestations in the individual case.

DISCUSSION

DR. A. W. ABBOTT (Minneapolis): I shall say just a word to keep the ball rolling. The doctor's paper

is very thorough, and is a good exposition of the subject, and I was delighted to hear it. I agree with him, I think, in all particulars of his paper. There is one thing which he did not fully elaborate, and that is in reference to tubercular ulcers. Of course, the time is short and we cannot go into all these things, but the point I wish to bring out is this, that tubercular ulcers will heal sometimes. Sometimes tubercular ulcers of the bladder with tubercular disease of the kidney will heal on the same side as the tubercular kidney itself. In the paper which I prepared I cited some cases which I did not have time to read, and one that illustrates the point that we cannot say that a tubercular ulcer will not heal, no matter what the conditions are. In one case I cited I had tubercular ulcer on one side and it healed, and on this side there was a tubercular kidney.

DR. C. H. MAYO (Rochester): I have a word to say with reference to surgery of the kidney. As long as there is so much kidney lying above the twelfth rib in those cases where it is not movable, much room can be obtained by a section of the twelfth rib. It seems to almost double the size of the space for the incision above the ilium.

The other question is what to do with the ureter in cases of tuberculosis. The ureter is never penetrated by tuberculosis. So it is bad practice, unless we are going to remove the entire ureter, to remove any of it. If we take part of it out we shall leave a fistulous tract, which will require sometimes a serious operation at a future time to remove. If the ureter is brought to the bottom of the wound and twenty minims of pure carbolic acid be put in it we shall have no trouble from this stricture. Carbolic acid does the same thing for the relief in a resection of the epididymis, and injecting a few minims of carbolic acid into the vas will take care of it as far as that is concerned.

DR. ARCHIBALD MACLAREN (St. Paul): I would like to bring out a point that Dr. Millet called attention to, and which has been mentioned in the discussion of this paper. It is a fact that the use of one system of exploration of the bladder in these tubercular cases is much more valuable than a double system. The Kelly system of air dilation worked very well until we got something better and until we had later systems for exploration of the bladder. I know the result that Dr. Millet has obtained, and I have been able since that time to more thoroughly examine female bladders with the male cystoscope than ever before. The great difficulty of catheterization of the ureter was that the catheter wobbled so that it was difficult to get the catheter into the ureter, while with a good male instrument the guide carries the catheter right to the ureteral opening, and helps to push it in. The Harris instrument for segregation of the urine is a very useful one. One experience which is very vivid in my mind was one where I used the Harris instrument. Believing that I had good specimens of the urine on both sides, I made a nephrotomy of a tubercular kidney, and found that was the only kidney he had. The kidney was filled with abscesses full of miliary tubercles, and after I opened the abscesses the man never recovered. I never attempted to catheterize the ureter before I took out the other kidney, and he lived eight or nine days. At the post mortem I found that the kidney which I had not removed was a solid, cheesy mass. The kidney removed contained three large tubercular abscesses and miliary tubercles throughout every section.

CONGENITAL DISLOCATION OF THE HIP*

BY EMIL S. GEIST, M. D.

Orthopedist to the State University Dispensary, City Hospital, St. Barnabas Hospital, and Asbury Hospital

MINNEAPOLIS

It is with no little hesitation that the writer once more brings to your attention this well worn and much talked of theme, congenital dislocation of the hip, but the fact that the deformity exists in this community and that there are methods of cure regarding it which offer so much hope, lead me to call your attention to this subject. (I am led to believe that this deformity is not as rare in this part of the country as generally supposed, for the writer has had occasion to examine eight cases within the last nine months, but four of which, however, could be considered operable.)

It is impossible to give a complete resume of the subject of dislocation of the hip. The literature is vast, and has increased so much, especially within the last five years, and opinions vary so much that it would be impossible to give at this time an outline of all that has been said. For these reasons we will consider only the matter of—

1. Frequency of the deformity.
2. The importance of the subject to the patient.
3. The symptomatology.
4. The treatment.

It has been ascertained that from one to two per cent of all deformities are congenital dislocations of the hip. These statistics are based on the observations of various writers in the old country where the deformity seems to be more prevalent, but more attention has been paid to this subject and the medical fraternity in European countries is better acquainted with it, and, therefore, more cases are seen at clinic. There is no apparent reason why the deformity should be more prevalent there than here.

It is four times as frequent in females as in males. This is enough to make one anxious to help these cases. We have all seen cases where a person goes through life with a deformity of this nature, and excepting the limp, which in most

cases is well marked, it causes the patient no great amount of discomfort. But who can tell on examining a little girl of, say, 5 years whether she will be of this fortunate, favored class? Thirty to forty per cent of the patients with congenital dislocation of the hip, who have grown up to adult age without treatment, are actually troubled in a painful manner by their deformity. This discomfort is usually felt only after the patient has reached maturity and after the weight has become marked. During childhood these things are not in evidence. These people complain of a tired feeling; they are not able to walk any great distance, and very many of them are unable to follow the ordinary pursuits of life. Therefore, Moore rightly says, in his excellent work on orthopedics, that "the deformity is always unsightly and usually disabling, and an operation is certainly justifiable."

Not much need be said regarding the symptoms. Congenital dislocation is not usually noticed until the child begins to walk. Unilateral cases, when marked, present a shortening of the limb, which is recognized by a careful parent or nurse before this time. It is, however, only when a child begins to walk, and then not until the child has learned to walk well (the waddling at the beginning of its walking career cannot attract attention) that the parent comes to the physician for relief. Here they complain of the limp, or they complain that the child has an abnormal waddle in its gait. In a case of double congenital dislocation we have marked lordosis. We have also the well known duck-like walk. In all cases we have the shortening of the defective limb. The shortening may vary from one-quarter to one and one-half inches in a child. All motion of the joint is conserved excepting abduction which is always limited. The trochanter major is above the Nelaton's line. Normally we feel under the femoral artery, and just beneath Poupert's ligament, the resistance of the head of the femur. In a case of congenital dislocation we

*Read before the Hennepin County Medical Society, October 2, 1905.

find that there is an abnormal softening in this region; that we are able to depress the underlying soft parts much more readily, for the head is gone; it is on the dorsum of the ilium. Another symptom to be elicited is the one indicated by Trendelenburg.

Not so much reliance can be placed on the value of the *x*-ray as has been thought by some. Former reports of what has been done, and even some that are still being published, would indicate that there are writers who lay too much stress on the value of the *x*-ray. Here we find statements as to the prognosis of the case given, based on the so-called findings of the *x*-ray regarding the shape of the head of the femur or of the socket. Now, the fact that usually no shadow is thrown by cartilage precludes the possibility of making a firm prognosis regarding the acetabulum and the head of the bone. We may have, for instance, the skiagraph showing a most beautiful socket, and still, after having brought the head of the femur opposite it and using the femur as a probe to explore this supposedly well-shaped socket, we are disappointed in finding only rudimentary conditions; in finding it full of something, and this something being a dense fibrocartilagenous mass. Here the bony shadow showed a perfect acetabulum, while the actual fact was that it was filled up with hyperplastic tissue. Again, we may have the picture of the acetabulum showing most rudimentary conditions,—showing a flattening; and still at the operation we find perhaps a well formed cup. Here it is simply due to the fact that a cotyloid rim is present, and has not been projected on the picture. Similar remarks may be made regarding the head of the femur, but these facts go to show that the *x*-ray is an aid in diagnosis, but a help which one must be careful in using. It is of great value regarding the matter of torsion of the neck of the femur, to which we shall refer later.

Not much need be said regarding differential diagnosis. No other condition presents the same symptom-complex. It is well, however, to think of coxa vara, to think of paralytic dislocations, and to think of the fractures of the neck of the femur in childhood, which have been proven rather frequent by Whitman, of New York.

The treatment of this deformity has caused, and is causing, much discussion. Hardly anything effective had been done until Hoffa startled the world by his daring surgical procedure, which had for its chief feature the actual deepening of the socket and placing it in the head of the thigh bone. This operation was done many hundred times by Hoffa, Lorenz, and others. It was found that the results, while good in many cases, still lacked in many features. Ankylosis was of too frequent occurrence, even in those many cases where sepsis did not occur. In performing this operation as often as he did, the number exceeding 250 cases, Lorenz had ample opportunity to study the pathological anatomy of the structures forming the hips, and from these observations he has worked out what he has chosen to call his "bloodless operation." Much comment has been caused in surgical circles by the use of this word "bloodless." One cannot peruse any report of society proceedings without finding some one taking exception to this word. The fact that it is not a bloodless operation; that there is hemorrhage into the subcutaneous and muscular tissues; and that there is always ecchymosis, certainly had been known to Lorenz when he first announced his operation as a bloodless one. The writer thinks that it is a misnomer which has crept in in translating the term literally from the German to the English, and he prefers the term "manual reposition" but certainly too much stress has been laid upon this one weak point in the attack upon a method which offers great chances of success. But the method depends very little on the fact that this is a so-called bloodless operation. The Lorenz treatment is founded on an entirely different basis. Of course the fact that an open wound is not created is, nevertheless, of great moment. It is always a serious procedure to invade the hip-joint, even if done in a surgically clean manner. While the beneficial results of asepsis permit one to enter the hip as freely as the abdomen, there is still no one who can claim absolute perfection, and therefore the factor of sepsis must be taken into consideration today as well as it was ten years ago, although of course the probabilities of its occurrence are much less.

In short, the Lorenz method is based upon the following two axioms: The first of which is the

accurate placing of the head of the femur in contact with, and opposite to the center of, the acetabulum; the second of which is the retention of the bones in this position for a long time, the idea of this retention being to have a new socket formed, or to have the socket increased in depth by placing the parts in contact and use. It seems too much to suppose that the anatomy of the parts will change under these conditions, but there are observations enough, not only by Lorenz, but by other investigators, to show that this process, namely, the deepening of the acetabulum, actually occurs. Very interesting is the observation made by Mueller, of Stuttgart, who had opportunity to perform autopsies in two cases, after the bloodless reposition. One of these cases had died from intercurrent disease two years after the operation. The operation had been a perfect success, and no acetabulum of any depth was in evidence at the time of the operation. At post mortem the parts were found to be in almost ideal condition, there existing a well formed socket and perfect function of the joint. Similar experiences have been published by Joachimsthal, Ludloff, Lange, and others.

It is not necessary here to go into the technic of the reposition, which has been described so often and which so many of you have doubtless witnessed. The first step consists in removing the obstacles of reposition which are caused by the shortening of the muscles (chiefly the adductors) and the capsule. This is achieved, on the one hand, by a subcutaneous tearing of the adductors near their attachment to the pubis, and, on the other hand, by a series of maneuvers which have for their aim the stretching of the muscles and capsule. In cases which are brought at the right age these manipulations only rarely take on the aspect which has been termed "brutal" by many. It is only when the age-limit is approached, especially in cases of double dislocation, that one must exert himself to the utmost in performing reposition, and where most careful judgment must be used to evade disagreeable accidents. The most important obstacle, and an important one it is, is the capsule, and it is this which in many cases prevents a successful reposition. In a very interesting paper published some months ago by Dr. Sherman, of San Francisco, much stress has been

laid upon this element. Judging from this paper he has entirely given up manual reposition, and does arthrotomy. In other words, he enters the joint, and actually places bone to bone, cartilage to cartilage. In these twenty-eight hips he claims to have found but once that the capsule presented conditions favorable for the bloodless operation, and that he has had an average series of cases.

Usually he found a narrowing and constriction "of the capsule just at the posterior and superior or superior acetabular rim." It remains to be seen whether or not Dr. Sherman's series of cases has been an exception to the general rule. Doubtless it is that this element must be seriously considered in performing any operation for the cure of this deformity. It seems, however, that the age-limit of Dr. Sherman's cases did not vary much from that given by Lorenz, only four of these cases having been over seven years of age. It is unfortunate that no means are available to tell one of the condition of the capsule before attempting operative procedures. It seems to the writer, however, that Dr. Sherman's series has been exceptional, for the statistics of others, in so far as any exist, while confirming in general the view that the capsule is often a serious obstacle, still do not lead one to think that it is great enough to warrant the abandonment of maneuvers of manual reposition. In the great majority of the cases of Dr. Sherman, the typical Lorenz operation would probably not have been followed by any disastrous consequences, for it is only when we begin to touch the age-limit that we must fear untoward happenings. In cases that come at the most favorable age, namely, between two and five years, not much need be feared from the much reputed and much abused violence of the manual reposition as advocated by Lorenz, and I can see no reason why this might not be done as a preliminary step; for in doing this one would have overcome all the mechanical resistance of the soft parts; one would have brought the ball and socket to be opposite to each other, and held them there; and the secondary arthrotomy, if necessary, would have become an exceedingly simple matter devoid of the always more or less forcible manipulation necessary to bring the head of the femur into place. This would be of great advantage, because with the most rigorous aseptic

sis trauma or crushing or tearing of tissue increases the danger of infection, which we here desire so much to avoid.

The chief feature of the Lorenz treatment is to be found, not in the character or manner of the reposition, but in the fact of the retention of the bones and functional weight-bearing, and in the painstaking after-treatment. Too much stress cannot be laid upon this point. It is unfortunate that the newspaper publicity which has been given this subject has created an impression that when the operation is done, all is done. As a matter of fact when the operation is done the treatment is but begun. It also seems unfortunate that Professor Lorenz operated so much in this country leaving the all-important after-treatment of a number of his cases in willing, though untrained hands, for this in the Lorenz clinic is most carefully individualized, there being no set rules, every case being a law unto itself. Lorenz says "the method is not characterized by the manner of reposition alone, but by the after-treatment especially."

You have doubtless seen the manner in which the first cast is applied. The thigh is placed at right-angle abduction, and is rotated outward and extended, and the knee is flexed. In this primary position the hip is kept for a period of months, the length of time depending upon the conditions found at the time of the operation. If examination shows a well formed acetabulum the period of fixation in this position is shortened to a minimum. If the operator is led to believe that there is a poor socket, the period of fixation is continued for a much longer time. Children with a double dislocation, of course, are forced to be inactive during this period of time. But even they, in some cases, are able to move about, while children with unilateral dislocation walk soon after the first operation. The second cast is put on in a changed position when the operator feels that the retraction of the muscular tissues and capsule has been sufficient to hold the femur opposite the socket, and the thigh is then carefully drawn down to an angle of forty-five degrees, plaster casts being kept on in most cases for a period of from nine months to a year. After this a series of exercises and careful massage of the muscles are instituted, which measures must be under the control of the physician, and

there are few cases that are finished with the treatment a year after its inception. No one who has operated upon a great series of cases has failed to obtain good results. Lorenz now claims great improvement in from seventy to eighty per cent of the cases, and in from thirty to forty per cent he claims perfect anatomic results. In those many cases where there is a great functional improvement without anatomic cure there occurs, to a greater or lesser extent, a redislocation, forward and slightly upward, so that the head of the bone comes to rest under the superior spinous process of the ilium. When men like Lorenz, Hovath, Redard, Whitman, Hoffa, and Ludloff report favorable results in cases that sum up to the hundreds, we certainly must give serious attention to this "bloodless" operation. An important and, unfortunately, rather frequent obstacle to retention is an abnormal twist to the neck of the femur. This factor plays the same disturbing role whether reposition is accomplished by manual procedure or by arthrotomy. And it must be combated in either case by the same means, namely, by circumferential osteotomy, as advocated by Shede and Whitman. If this is not done the dangers of relaxation are great, or it frequently happens that the limb, instead of assuming the impossible forced position of inward rotation, rotates outward, and the trochanter major comes to rest opposite the acetabulum.

In short, it is the opinion of the writer that the cases that come for treatment early should first be subjected to the manual reposition, for at a right age the operation in the hands of one with any experience is distinctly not a severe one. In a recent number of the *NORTHWESTERN LANCET*, Dr. S. C. Baldwin, of Salt Lake City, voiced approximately the same sentiment when he says: "In suitable cases the bloodless method should be employed, but there come to us some cases that are unsuitable and for which some other method must be employed." But so far, having a child at the favorable age, who is to tell us whether or not the manual reposition will succeed? And what harm can be done until it is tried? It is only when the age-limit is neared that we must look out for untoward results or accidents. It is in these cases that fractures are possible and that paralyses are to be feared.

Very few cases have been reported where paralysis has been permanent. Of course it is an unfortunate accident when such a thing happens. Having operated upon a child at a most favorable age there is still plenty of time for arthrotomy, and this is certainly an operation which will come more and more into vogue as we learn to fix the limitations of manual reposition. However, the after-treatment in these cases reduced

by arthrotomy differs in no material respect from that of the bloodless reposition. The theory of it is exactly on the same basis, and the writer can see in it only a modification of the line of treatment that Professor Lorenz has indicated, and cannot see why the name "Lorenz method" should not apply as well to this as to any others where retention and functional weight-bearing are the chief factors in producing a cure.

SYPHILIS OF THE LIVER AND ITS OPERATIVE TREATMENT, WITH A REPORT OF THREE CASES*

BY ARCHIBALD MACLAREN, M. D.

ST. PAUL

Acquired syphilis of the liver in its tertiary stage assumes three distinct microscopical types: First, when the eruption shows itself in the form of white milky patches, irregularly star-shaped in form, due to an inflammation of Glisson's capsule, as first pointed out by Virchow; second, single gumma, frequently large and usually on the anterior surface or along the anterior border of the liver; third, multiple gummata, which appears to be the more frequent form, varying in size from a small bird-shot to an English walnut.

Rolliston says: "The right lobe is much more often affected, and the anterior surface far more frequently than the under aspect. In 86 cases of hepatic gummata collected by J. L. Allen, only 11 were single. It is said that the neighborhood of the falciform ligament is a favorable situation for gummata." But Rolliston has not noticed any such tendency, except for the anterior surface.

The gross appearance of old gumma presents raised tumors, irregularly nodular, with three concentric zones, the center yellow and softened; the middle one whiter, more resisting and elastic; the third or exterior a fibrous shell.

The first form is perhaps the early manifestation of commencing sclerosis, with which it is sometimes associated. Maurice describes this type as sclerogumma.

The differential diagnosis between carcinoma of the liver and the larger gummata is often difficult. The syphiloma is smoother and not quite so nodular in feel, and is usually of a yellower color. Primary carcinoma of the liver is rare. It is more rapid in its course, and the patient is usually sicker than with syphilis, and, as Cumston says, "enlargement of the spleen favors syphilis." Multiple gummata of moderate size may also closely resemble carcinoma in its secondary stage, while the smaller syphilides may at times resemble miliary tuberculosis.

Syphilis is sometimes mistaken for cirrhosis of the liver. In such cases hematemesis, dilated veins in the abdominal wall, ascites, and dyspepsia are less frequently seen than in cirrhosis. When ascites is due to cirrhosis the patient is thinner,* while in syphilis the general nutrition may be fairly preserved.* As the iodides are frequently given in cirrhosis, some of the reported cures of this disease may have been due to a mistaken diagnosis. In all three of these types the diagnosis may have been settled by a course of antisyphilitic treatment, or by the removal of a piece of the tumor for microscopical examination, as was done in two of the cases reported below.

Symptoms.—It is quite surprising how many

*Read before the Minnesota State Medical Association, June 1, 1905.

*In cirrhosis, if the liver is enlarged it is usually more symmetrical than in syphilis, for in the latter condition there is usually an irregular enlargement.

of the 15 cases of syphilis of the liver already operated upon and reported by Keen and Cullen, give no previous history of syphilis nor any of the ordinary evidences of tertiary syphilis, aside from the liver condition itself. In most of the reported cases the statement is made that they have not had the ordinary primary or secondary symptoms of syphilis. That they have not had primary sores, skin disease, falling of the hair, chronic sore throat, rheumatism, and that there is no enlargement of the glands.*

Treatment.—If syphilis of the liver is suspected, a course of antisyphilitic treatment, especially large doses of the iodides, should be given, and will cause a cure in a large proportion of cases. From 15 to 20 grains of the iodides of potassium and sodium, t. i. d., combined with mercurial inunctions, or, in acute cases, intramuscular injections of the mercurial salts. But in spite of large doses of the iodides some cases of large gummata will not disappear. Such cases are recently reported by Mr. R. Parks and Dr. Garrod.

This brings us to the question of the operation. Ausschultz and Hans Kerr think that even after exploration, if syphilis of the liver be found, the wound should be closed and the patient put upon antisyphilitic treatment. This position is undoubtedly correct in all cases except where large gummata are found, for these are the cases which persist in spite of treatment. My own experience, when viewed in the light of the reports made by Keen, Robeson, Mayo, and Freeman, in removal of large tumors of the liver of various kinds, makes me feel that the surgery of the liver is just commencing; that it is a fruitful field, one that we have shunned on account of the fear of hemorrhage; that many of the tumors of the liver

which we have universally abandoned can be safely removed today.

Hunbald reports 96 cases of resection of the liver, being all of the cases reported in the literature that he could find, with a mortality of 26 per cent. This included Keen's list, with a mortality of 15 per cent, while Cullen, who has tabulated all of the cases since Keen's report, finds 17, with two deaths, or a mortality of 11.7 per cent. But, to return to the surgical treatment of gummata: I find ten cases of either complete or partial removal of large gummata, including my own cases, with two deaths,—both of these deaths were treated by the elastic ligature method,—making a mortality of 12.5 per cent.

The removal of a gumma helps in the cure of any cases, because there is much less tissue to be absorbed. If antisyphilitic treatment was certain to absorb all gummata, then the risk of removal would not be justifiable. But, as it will not always absorb large gummata, and as the diagnosis is not always certain from gross appearance of the growth, removal is justifiable. Keen favors the removal of tumors with a red-hot cauterizing knife, tying the large vessels separately with catgut. Mayo reports one case successfully treated in this same manner. The constriction of part of the liver with an elastic ligature behind hat-pins has been successful in a few cases, but is also responsible for some of the late deaths. Konsnietzoff's blunt needle, with double catgut, as used by Mikulicz, is perhaps the best method of controlling the hemorrhage after removing the tumor. Gauze tamponing of the raw surface, especially after the use of the cauterizing, is an additional precaution in preventing hemorrhage.

Case I. A patient seen in consultation with Dr. Herbert Davis. This man was 40 years of age, he denies syphilis, and has not had, nor does he give now, any signs of syphilitic infection. He has been suffering with indefinite pains through the right upper abdominal cavity, with a moderate enlargement of the liver, first noticed six weeks ago. He has been suffering with attacks of colic for the past three months, with some loss of flesh and strength. On exploration, December 12, 1903, I found an enlarged liver, its upper surface covered with white star-shaped patches, while its under surface presented several

*It seems to me that there are two possible explanations; the first that there are so many extragenital primary sores which are not recognized as syphilitic; and, second, that the cases giving the ordinary symptoms have been properly diagnosed and treated, thereby preventing the later liver symptoms, or if a certain case has had the ordinary primary and secondary symptoms the later tertiary liver troubles will be much more easily diagnosed and the proper treatment instituted, thereby avoiding, perhaps, the necessity of an exploratory operation.

Of the cases which have come to operation, many have given only slight symptoms of any kind. The patients have looked well and have suffered only mild distress in the epigastric region; there has usually been a jaundice for several weeks with a temperature of about 100°, loss of flesh, and some enlargement of the liver; in several with a distinct tumor which felt like an enlarged gall-bladder, and in a few with a small ascitic accumulation.

Many of these have had colic, like biliary colic, and, if associated with enlargement and tenderness in the gall-bladder region, it is not surprising that they have been mistaken for gall-stone cases.

hard white nodules from the size of a plum to a pea. One moderate-sized nodule near the anterior surface was removed, and the wound sutured with catgut, the end of a gauze drain being stitched to the liver. Two microscopical diagnoses were made, one of carcinoma and the other gumma. After exhibition of the iodides, the enlargement of the liver disappeared, and the man gained 20 pounds in three months. As he remained perfectly well, now over two years since the operation, it is reasonable to conclude that the diagnosis of carcinoma was not correct.

Case II. Large gumma of the anterior border, operated upon four and a half years ago: Mrs. B.; seen with Dr. Jeannette McLaren, in December, 1900; 30 years of age; mother of three healthy children, ages 7, 6 and 3 years, respectively. These children show no evidence of hereditary syphilis, but are not of a very vigorous type. Five years before was treated by Dr. Schadle for some throat trouble; after the operation it was discovered that at this time she had a perforation of the soft palate, which quickly healed after a course of iodides. One year before I saw her Dr. Chas. L. Greene treated her for pulmonary tuberculosis. Tubercle bacilli were found in the sputum. Under treatment her weight improved in three months from 107 to 120, and the tubercular bacilli disappeared from the sputum. Dr. McLaren had treated her for chronic pelvic disease and general anemia, which always promptly responded to local treatment and Bland's pills. The abdominal growth was first noticed in August, 1900; it was not tender at any time. In October she became quite anemic, although the blood was not changed, red corpuscles normal, no increase of white cells. Temperature was from 100° to 101°.

Operation December 6, 1900. A large, white tumor on the anterior border of the left lobe, overlying the gall-bladder, the size of a man's fist, not pedunculated, extensive adhesions to the omentum. This tumor was removed, with at least one inch of normal liver substance, with a knife, after an over-and-over catgut suture had been passed with a large, curved round-pointed needle, constricting the same tissue more than once when it showed a tendency to bleed. Iodoform gauze drains were packed against the large, raw surface left after removing the growth. This

woman promptly recovered, and remained perfectly well, now four and one-half years since the operation. She has had iodides since the operation on several occasions. Dr. Wesbrook diagnosed gumma.

Case III. Mrs. L., seen with Dr. A. Sweeney. Patient is 36 years of age; married 16 years. Soon after marriage she had an attack of inflammation of the womb, was a patient of Dr. Sam Johnson, of Hudson, and was treated by him for several years at his sanatorium for chronic pelvic trouble and a chronic cough. Her first child was born dead, but was perfect, and not apparently diseased. Later she was quite well for seven years. The second child was born six years ago, and has always been a healthy child. Present trouble commenced two years ago, with pain in the region of the stomach and occasional attacks of vomiting and chronic soreness in the epigastric region. She has never had any symptoms suggestive of syphilis. Five weeks ago she first noticed a lump just above the umbilicus, continuous with the edge of the liver. Exploration, on April 7, 1905, demonstrated a uniformly enlarged liver, covered with hard white irregular nodules, each about the size of a silver half-dollar. Fully 30 such nodules were seen and felt in both lobes, equally distributed in both the upper and under surface of the liver. No larger mass was found anywhere in the liver, and no other evidence of disease was found in the abdominal cavity. A section of one of these lobes was removed, and the cut edges were united with catgut sutures. There was a very slight accumulation of ascitic fluid. This woman recovered promptly, and left the hospital improved under iodides, but with some ascitic fluid in the abdomen. She has gained fifteen pounds, and the ascitic fluid has decreased.

Dr. Hines and Dr. Rothrock report that the growth is a gumma.

DISCUSSION

Dr. C. H. MAYO (Rochester): I have been much interested in the paper presented by Dr. MacLaren, and I regard it as a valuable contribution to the subject. In looking over the literature we find there much written, but little said. Very few cases occur in the experience of any man, and in looking over our own work I find we have had three cases. The first was a woman forty years of age in whom an abdominal exploration was made. She was suffering from ascites, and had some obstruction of the bowels; and the upper area of the abdomen and the liver were

in such condition that we closed the abdomen, thinking the case hopeless, and she recovered some time later. The other two cases were in men. One of them, as the diagnosis showed, had a tumor of the liver and a tumor of the spleen and what seemed to be in that case a specific lesion. An exploration was made, and the case recovered. The other man died, his syphilitic condition being present in other organs.

As long as there is so little known on the subject, the history of every one of these cases is valuable, especially at this time, when there is so much discussion on diseases of the liver; and therefore, the detailed report of Dr. MacLaren will be of valuable assistance in making a diagnosis in these cases. When we think of the effects of syphilis, it will lead us, where we are in doubt, not always to make a bad prognosis. There is still a possibility that you cannot always tell the difference between specific lesions and carcinoma. Of course, there is a chance of mistaken diagnosis; there may have been some chronic trouble of a suppurative character.

DR. S. MARX WHITE (Minneapolis): In discussing Dr. MacLaren's paper, it will be necessary to limit my remarks to that circumscribed form of syphilis seen in late stages of the disease, i. e., the gumma. The number of cases that I have seen coming within this classification may be classified as follows:

1. Three cases recognized clinically.
2. Two seen at the post-mortem table.
3. The gross specimens and microscopic sections from three cases where the tissue was removed at operation.

Of the clinical cases, one recovered almost completely, and one died and was included in the number seen post mortem.

Dr. MacLaren has touched upon some of the points of importance in diagnosis and treatment, but there are some on which I wish to lay emphasis. Other signs of syphilis may be present when a diagnosis may be relatively easy, but in the absence of this the following are of especial importance:

1. The fact that we frequently have absence of history or denial of specific infection in such cases as these.
2. The presence of a palpable mass, in form and consistency different from the remainder of the liver substance, and usually tender to the touch.
3. The frequent association with cirrhosis, giving symptoms of portal obstruction, usually, however, less persistent in their manifestation than in pure cirrhosis.
4. Frequent enlargement of the spleen from congestion or amyloid, and frequent involvement of the kidney from syphilitic nephritis or amyloid.

These latter signs, if we except amyloid, help es-

pecially to differentiate from carcinoma.

A consideration of all these points has led me in some cases to institute antisyphilitic treatment where there had been an absolute denial of syphilitic history, but even then we may be led astray, as in the following case:

I remember the case of a man of middle age who presented symptoms of carcinoma of the stomach. He had an enlarged liver; not tender; moderate ascites; a point of tenderness over the epigastrium; an absolute lack of hydrochloric acid in the stomach contents after a test-meal; enlarged lymph glands in both axillæ; and two tender points over the sternum. All these points suggested a diagnosis of carcinoma of the stomach with liver and bone metastases, or a hepatic cirrhosis. The case resulted in death, when the autopsy revealed cirrhotic liver with a very large gumma projecting from the middle of the diaphragmatic surface just beneath the falciform ligament and separating the right and left lobes. This mass was as large as two fists, and the amount of necrosis was tremendous. If antisyphilitic treatment had been instituted, it is probable that the tumor would have disappeared under the treatment, although the cirrhosis might have remained. It would have been impossible to remove the gumma through the abdominal route, and yet the case suggests the possibility that such removal, as suggested by Dr. MacLaren, might be of value in certain cases, to limit as far as possible the tax upon the absorptive powers of the patient incident to the absorption of so large a mass of dead tissue. However, I am inclined to think that operative removal will be limited largely to cases where exploratory operation is made for diagnosis and not when a case is known to be syphilis.

DR. A. J. MURDOCK (Minneapolis): I would like to inquire whether hiccough has been found a frequent and reliable symptom of gumma of the liver. I speak of a case I had the past year with a very large gumma of the liver. The patient has suffered with hiccough at least half of the time during the year. It would continue night and day for a week or ten days; then perhaps there would be a cessation for a few days, and then it would begin again.

DR. ARCHIBALD MACLAREN (Essayist): The question has been asked regarding hiccough. I would say that in the later stages, probably, hiccough would be a prominent symptom. The few cases I have seen—and they are very rare according to literature—have been in the early stages.

I have been much interested in Dr. White's experience, and I am convinced in my own mind that there are more cases of syphilitic diseases of the liver than we are accustomed to think, and if we look for them we shall find more than we have any idea of.

BLADDER EXSTROPHY WITH REPORT OF A CASE*

By R. C. DUGAN, M. D.

EYOTA, MINN

The history of surgery for the past three decades has been a triumphal march of progress toward the physical millennium, where man may live out his allotted days in physical comfort, if not in mental joy. Forty years ago surgery was only called in as a last resort to save a life which

was then hardly worth the saving, considering the mutilation necessary to save it. But with the advent of anesthesia and aseptic surgery there was a gradual change from the surgery of necessity to that of election, wherein the question of actual life-saving took second place to the question of the best means of making this strenuous and often painful life more comfortable, and, if pos-

*Read before the Minnesota State Medical Association, June 1, 1905.

sible, enjoyable.

Whereas, in the past, the woman with pus tubes was never operated upon unless a palpable pelvic abscess was found, which could be drained, but, though possibly saving her life, would leave her a chronic invalid. Now you do a complete operation, leaving her a healthy and a happy woman.

The man with enlarged prostate was never considered a surgical case until such a time as, by means of a catheter or any other minor method, his bladder could not be relieved, when, if a surgeon of sufficient daring could be found, perhaps his bladder was opened; while now, at the first symptom of senile retention, the prostate is removed, thus giving the man a chance of spending the remainder of his days in, at least, comparative comfort. Still, with all these brilliant and practical improvements in surgery, we have among us those frightful cases of congenital malformation which, with all the great talent that has been honestly and earnestly expended to try and relieve them, are still in a deplorable condition.

The operations for harelip and cleft palate have been fairly successful, but in exstrophy of the bladder we have a most deplorable condition. Despite the labors of Billroth, Wood, Robson, Maubey, Floyd, Simon, Bigelow, Mattas, Wheaton, and others, who have helped to relieve to some extent the miserable existence of these unfortunates, owing largely to the fact that, as yet, no one has been able successfully to form an artificial sphincter muscle, these cases, after operation remain still a living reproach to the surgeon.

All the attempts to transplant ureters into the rectum, which, if successful, would be the ideal operation, have resulted, sooner or later, in the death of the patient from septic nephritis. The operation of crushing the pelvic bones together to narrow the opening at the symphysis, as suggested by Trendelenburg, caused too much trauma for the results obtained. The ureters have been planted in the penis by Sonnenburg, with entire removal of the bladder, but in a case of extensive exstrophy this would be impracticable by reason of inability to close the wound in those cases already having herniæ, with very favorable conditions for further production of hernia.

The operations, five successful, reported by Rutkovaske, of utilizing a part of the bowel

for an artificial bladder, seem to me more of a surgical curiosity than of real practical value. Certainly, it is only applicable to very small exstrophies with comparatively good abdominal walls. As in the cases seen by me, an opening of the abdomen large enough to perform this operation would certainly mean a hernia if the life was saved. We are, therefore, at present confined for safe operations to some of the plastic methods. Wood's, or Robson's modification of Wood's, offers very good prospects in the female or in a very small exstrophy; but in cases of widely separated recti muscles the same objection arises in regard to hernia as heretofore mentioned.

In one case of my own, in trying to turn down an abdominal flap after the Wood method, I found that there was practically no protection to the peritoneal cavity by the skin for several inches above the upper border of exstrophy. It was in discussing this case with my friend, Dr. C. H. Mayo, that he suggested the splitting of the scrotum in a novel manner, which I tried, and found surprisingly easy and giving extremely good results. The amount of exposed bladder wall was large, being about four and one-half inches in diameter, nearly all raw, and very sensitive. The scrotum, on account of the large hernia contained therein, was greatly stretched, giving plenty of loose and easily moved tissue, which I split across rather low down, and loosening well slid upward until it covered the exstrophy easily. Then, on each side around to within about three-fourths of an inch of the median line above a flap of about one-fourth to one-half an inch was dissected up, under which, after denuding the edges of the scrotal flap, it was slid and sutured in place with horse hair. The lower part of the scrotum was then loosened and slid up to cover the raw external surface of the upper flap, thus leaving no raw surface. A temporary drainage was inserted completely through the lower part of scrotum.

The flap united nicely, completely covering the raw surface and leaving plenty of drainage at the upper part, so that the young man has since been as comfortable as is possible for him to be with a leaky bladder. He has not been bothered in the least with concretions, chafing, or soreness.

In conclusion, I would like to say that, if con-

sent could be obtained and the surgeon dare, the greatest favor we could do these cases, in the male, is to castrate them, and to thank Dr. Mayo for his valuable suggestion.

DISCUSSION

DR. C. H. MAYO (Rochester): I was very much interested in Dr. Dugan's paper because I saw this case some years ago. The bladder was in a terrible condition, and projected beyond the abdominal wall so that it stood out a raw, bleeding mass. This boy had reached the age of sixteen when he was operated upon by Dr. Dugan, and he said if I could not help him out he would send him to me, and that was an

incentive for me to see that he was kept at home. He closed the malformation of the penis, using the scrotum as a graft to cover the raw bleeding surface.

DR. M. C. MILLER (Rochester): Regarding the appearance of the bladder in these cases it seems that the disease presents three distinct stages. In the early stage the affected areas are simple hyperemic spots with sharply defined edges surrounded by healthy mucous membrane. Later these spots slough and produce the typical ulcer. The ulcers, in turn, coalesce and form the contracted bladder, with little or no healthy surface, and perhaps extensive granulations.

I uniformly use the same instrument and technic in male and female. By using the same instrument one becomes accustomed to the cystoscopic appearance and does not have to keep but one picture in mind.

HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

CASE OF PELVIC DISEASE AND GALL-STONES, WITH ACUTE DILATATION OF THE STOMACH

IN THE SERVICE OF DR. A. E. BENJAMIN

Mrs. W., aged 37, housewife, weight 140, American, widow.

Family History: Good.

Previous and Present History: Had child's diseases. Two years ago had an attack of pleuropneumonia on the left side. She thinks possibly she had an abortion last fall. Four years ago had attacks of pain in the inguinal region. Then attacks have come on two or three times a week ever since, and sometimes have lasted in milder degree for a week at a time. Usually these attacks have lasted about one-half day.

Present Illness: Six months ago she began to notice pain in her left groin, but at present also in the right. This pain is constant and radiates around to her back, and also down her thighs. She has also had some headache since. The pain came on gradually, and now for a long time it has remained about the same. For the last week she has noticed a pain in the epigastrium, after eating. She has never been nauseated.

On examination, adhesions of the left tube and

ovary were found, and some of the right were found, with a retroversion of the uterus, possibly due to these adhesions, also a tender appendix and gall-bladder.

Urinalysis: Very faint trace of albumin;
Blood Examination: Normal.

Operation: The appendix was found somewhat thickened, and was removed. The right tube and the right ovary, the latter fibrocystic and enlarged, were removed. The left tube was also somewhat adherent. The outer half of the tube was removed. The ovary, although fibrous, was allowed to remain. A Gilliam operation was then performed. The gall-bladder was examined, and two quite large gall-stones were found within the viscus. Owing to the condition of the patient no operation was done for the gall-stones at this time. The patient, following the operation, had a great deal of pain in the left hypochondrium and epigastric region, owing to a dilated condition of the stomach caused apparently by an obstructed pylorus.

A month later a second operation was performed for the gall-stones. The gall-bladder was considerably enlarged and elongated. It was opened, and much bile escaped. A number of irregular gall-stones were found, ranging in size from one-half to one cm. in diameter. Two large stones were removed, one about two and one-half, the other about three cm. long by two and one-quarter cm. in width, each having facets. Twelve gall-stones were removed in all.

The patient made an uninterrupted recovery, and has no gastric disturbances now, two months

after last operation. An interesting point in connection with this case was the extreme pain and great dilatation of the stomach. This obstruction and resulting gastric disturbance, manifested often by a dilated stomach, is frequently noticed in gall-stone disease, and is overcome by an operation.

TWO CASES OF PROCEDENTIA

IN THE SERVICE OF DR. G. G. EITEL.

Case 1.—Mrs. J. R., a German Jewess, 53 years of age, entered the hospital September 9, 1905 having the appearance of robust health. Her weight was 225 pounds. The patient belonged to a strong and healthy family; her father having died at the age of 74, while her mother lived to be 68. Three brothers and two sisters are living and well.

She recalls no illness during her childhood. Menstruation began at 16, and she was always normal as to that function. She married at 24, and has given birth to five children at full term, with no miscarriages.

Her present trouble began soon after the birth of her youngest child, nineteen years ago. At first she complained of weariness even if her household duties were light. The next symptoms to attract her attention were backache, pain darting down the thighs and bearing down. Thirteen years ago her symptoms had become so troublesome that her ill health was apparent to every one. From that time until the present, her nervousness and a tendency to faint easily, constituted her chief trouble.

The uterus, in its descent, had drawn the ovaries and tubes downward, and had pulled upon the bladder to the extent of producing a desire for frequent micturition. The cervix had a deep bilateral tear, and was badly eroded. The pelvic floor, by this time, had become so relaxed that the uterus protruded through the vulva. Constant pressure on the rectum had developed large hemorrhoidal masses that extended through the anal sphincters.

The uterus was first brought down into view through traction. After curettage the cervix was amputated according to Schröder's method. That the relaxed condition of the

vagina might be corrected, an oval section of mucous membrane was dissected from the anterior vaginal wall, extending from just below the urethral meatus downward about three inches. The refreshed edges were then brought together, and held by catgut sutures, at the same time the submucous tissues being crowded back. The perineum was next repaired after Emmet's method, thus rebuilding the pelvic floor. The hemorrhoids were removed by the clamp and cautery.

The patient was kept in bed through an uneventful recovery of two weeks. After having been out of the hospital nearly two months, she reports a disappearance of all unfavorable symptoms while a vaginal examination shows the pelvic organs in a normal position.

Case 2.—Mrs. M. E., a large woman 48 years of age, weighing 240 pounds, entered the hospital August 24, 1905, and was discharged three weeks later. She belongs to a rugged Irish family, whose only taint was the death of the mother in middle life from pulmonary tuberculosis.

Married in her early twenties, she has given birth to eight normal children, and has had three miscarriages. None of her deliveries were instrumental.

Twelve years ago, immediately after the birth of her fourth child, her trouble began. At first she was annoyed slightly through constant headache, and some pain extending down the front of her thighs. As she tried to be about on her feet more, attending to household duties, the above-mentioned symptoms increased, and new ones appeared. Constipation grew to be very obstinate, and, as a result of it, frequent headaches and a capricious appetite added to her misery. Somewhat over a year ago, the bearing down increased to the point of being almost intolerable. The patient then noticed that the vaginal wall began to roll outward, while she was in upright position. Soon after prolapse became complete. By this time she was unable to stand or walk with any degree of comfort.

When she presented herself for examination the uterus was found protruding from the vagina. The cervix was greatly enlarged

and elongated, and it also had a deep bilateral tear.

The uterus was at first curetted thoroughly, after which an intra-guterie application of tincture of iodine was made. The cervix was then amputated, after which the uterus was replaced in its normal position.

As in Case 1, to narrow the relaxed vaginal walls, an oblong section of mucous membrane was dissected from the anterior wall of the vagina. The edges of the wound were then brought together with continuous catgut sutures, the underlying tissues at the same time being crowded backward. The perineum, which had been lacerated to the second degree, was repaired by the Emmet operation.

The patient was then put to bed where, because of her unusual weight, she was kept quiet a week longer than is required of a slight woman. When she was discharged from the hospital the uterus was in its normal position, the vaginal walls in place, and the pelvic floor firm and strong.

IN PRIVATE PRACTICE

A CASE OF CONGENITAL ABSENCE OF RECTUM AND ANUS

BY ERNEST Z. WANOUS, M. D.

Mrs. B., age 42, gave birth to a baby girl August 16, 1905. The second day of my visit the nurse called my attention to the fact that the baby's bowels had not moved, and stated that upon investigation she had found no external signs of the anus. The folds were completely obliterated, the median raphe extending entirely through the anal region. The ischiorectal fossæ and also the vagina were inspected, but it availed nothing.

Family History: No recollection of mal-development or degeneracy in either lineage. Father, age 48, a chronic alcoholic, is somewhat erratic and of a vascillating temperament; had never had a disease of any kind. He is a barber by trade. Mother is well developed, rather morose, given much to worry. She has given birth to ten children, the oldest being twenty-three; the youngest living, seven years. One child died

at the age of seven months from some throat trouble. The mother says, "it was never able to swallow properly from the time it had been born." The remaining children are robust and healthy.

Operation: After a thorough examination, having found no signs of the rectum, I decided to explore the region. The child was chloroformed, placed in a dorsal position, the limbs being held flexed upon the abdomen, and pressure was made from above by the nurse. A median incision was made through the skin and superficial fascia, extending from the posterior vaginal wall to the tip of the coccyx. The incision was gradually extended into the deeper tissues, and a careful exploration of the parts made with the little finger. Being disappointed in not locating any pouch, the wound was packed lightly with gauze to keep the muscles apart, and another examination was made the following day, but nothing further had developed. At this time an ileocolotomy was advised, there being a distinct bulging in the left iliac region. The mother, however, objected to any further surgical procedure, which was fortunate in this case, as there would have been but a slight possibility of bringing the bowel down at any future time, had the child withstood the shock of the operation.

Autopsy: The child died on the sixth day. Two hours after death the findings were as follows: Abdomen markedly distended with gas, considerable fibrin and meconium present in the abdominal cavity, some agglutination of the bowels. The blind pouch of the descending colon was still partly filled with meconium, but had become perforated on its anterior and mesial side about 30 mm. from the most dependent portion of the bowel. The pouch terminated at the crest of the ilium, showing only a few fibrous bands within the folds of the peritoneum, which normally retains the sigmoid in place.

Histology: These cases being extremely rare, it occurred to me that a brief resume of the histology appended to the case reported, would be apropos. It explains why we meet with this mal-development. The original intestine consists of an inflection of the hypoblast, extending the entire length of the embryo, and is situated just beneath the primitive vertebral column. After it becomes closed at its extremities, it manifestly divides itself into three parts: the cephalic fold,

the mid-portion, and the caudal fold, from which is formed the upper and middle part of the rectum. The anus is formed by an inflection of epiblast, which extends inward, approaching the termination of the hypoblast and, finally, communicates with it by a solution of the continuity in the septum between the two. Thus any con-

dition which would dwarf the development of the two extending folds of epiblast and hypoblast would cause some one of the abnormalities some times met with. In the case reported, the inflection of epiblast was completely undeveloped, and the hypoblast only partly formed, thus giving us so high a termination of the bowel.

CLINICAL MICROSCOPY

CONDUCTED BY GEORGE DOUGLAS HEAD, M. D.

SAHLI'S DESMOID REACTION.

In the *Journal of the A.M.A.*, June 3, 1905, page 1820 there is a review of a new test devised by Sahli for determining the digestive power of the stomach. The author takes a piece of rubber dam, 4 cm. square and 2 mm. thick, dusts it with talcum powder, and places in the center of the piece of rubber a pill composed of methylene blue .05 gm., iodoform, 1 gm., extract of licorice, .04 gm., and pulv. licorice, .04 gm. The corners of the square are then brought together over the pill, and a very fine catgut is wound three times around the bag thus made and tied tight. The protruding ends of the rubber are then cut off. The patient swallows this pill in its rubber bag after the noonday meal, and is instructed to urinate at 5 and 7 p. m., and again in the morning, each specimen of urine being placed in a separate bottle and labeled. The saliva can also be tested for the iodine reaction. As soon as the pill is swallowed the catgut is digested off by the gastric juice, and the methylene blue and iodoform are liberated. The little bags can lie in water for 24 hours or in pancreatic juice or in one or two per cent solution of hydrochloric acid without escape of the stain. Nothing but a combination of pepsin and HCl digests the catgut and releases the stain.

The writer concludes from an examination of 92 patients with this test that (a) a positive reaction always indicates normal digestion—by a positive reaction he means that the urine will show the methylene-blue color on the evening of the day upon which the pill was taken; (b) that this test will supply data for determination of the appropriate diet in certain cases, for the adaptation of the digestive stimuli to the chemical functional capacity of the stomach, and solve

various other problems in the physiology and pathology of the stomach.

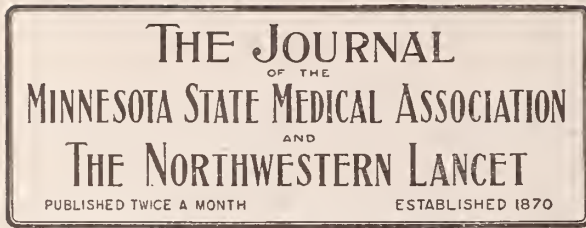
Coming from such an authority as Sahli this test deserves trial by those in a position to carry it out. It seems to us that the test might mislead one into thinking that the stomach were at fault where the patient harbored a nephritis and the delayed elimination of the methylene blue was due to kidney disease.

OPPLER-BOAS BACILLI IN GASTRIC CONTENTS

In *Progressive Medicine*, Vol. 7, No. 4, page 53, etc., is given a resume of the work of Heichelheim working in Riegel's clinic upon these long bacilli found in the stomach-contents and known as the Oppler-Boas bacilli. In his experience they are most readily found in the dark-brown clots often seen in the stomach-contents of cases of carcinoma. In his series of forty-three cases these clots were present in 97 per cent. Moderate or large numbers of these long bacilli in the blood clots in a stomach-contents which shows an absence of free HCl is greatly in favor of cancer, while the presence of single bacilli is not so positive, but also favors carcinoma.

Of the 43 cases studied, 20 were demonstrated as carcinoma of the stomach, by operation or autopsy. In all of these 20 cases Oppler-Boas bacilli were present.

The remaining 23 were cases of anacidity without disturbances of motility. The stomach-contents of these cases contained no clots and only occasionally a single bacillus. In 6 cases of carcinomatous ulcer with hyperacidity clots were present and Oppler-Boas bacilli in the clots. The bacilli were not always numerous, and sometimes prolonged search was necessary to discover them. It has been generally supposed that these Oppler-Boas bacilli were in some way connected with the presence of lactic acid in the stomach-contents. Their presence in stomach-contents containing an increased amount of HCl destroys the theory that they grow only in a lactic acid medium, and the credit of finding them in such cases belongs to Heichelheim.



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NOTICE TO SECRETARIES OF COUNTY SOCIETIES

Hereafter reports of society meetings furnished us by the president or secretary of a society will appear under "Reports of Societies," and will thus be recognized as official and reliable, while reports otherwise obtained will appear in our news column, and, of course, will be liable to such errors as always creep into second-hand information.

The proper place for these reports is in the former column, and our county societies are urged to see that official reports reach us. A report clipped from the local paper, with such corrections as are needed, will be accepted as an official report.

BOVO-VACCINE DEMONSTRATIONS

Prof. Behring has sent a large quantity of his new serum to Melun, France, and extensive experiments have been conducted which seemingly demonstrate that tuberculosis among cattle can be prevented. The bovo-vaccine was used hypo-

dermically, and cattle thus vaccinated with others not vaccinated were inoculated with virulent cultures of pulmonary tuberculosis. The unvaccinated cattle became tuberculous, and those vaccinated remained free from tuberculosis. This means a great step toward the creation of a serum for the cure and prevention of tuberculosis among human beings. The experiments must necessarily cover many cases, and conclusions must be reached only after many months or perhaps years of the most careful and painstaking research. As in all such endeavors criticism or undue enthusiasm is expected.

The building of sanatoria will be delayed pending the outcome of a great remedy. In the meantime the spread of tuberculosis will continue to gain ground unless every effort is made to check its progress.

If we could realize the extent of bovine tuberculosis to-day the effect would be startling. Whole herds of cattle are condemned after tuberculosis has advanced to nearly the last stages. It has been impossible for the inspectors to keep in touch with the various sources of milk supply. Occasionally an apparently sound cow is passed over in a hurried examination only to be condemned after careful inquiry. If the public knew the constant dangers that threatened the herds of cattle, vegetarianism would become most popular.

If Prof. Behring has discovered a serum that withstands the tests of time it will mark the greatest discovery of the century, and will do more for the public than can be estimated.

The people are indifferent, doctors as well as laymen. The spasmodic efforts at reform are kept alive by constant revival of the dangers of disease. Some day the people will clamor for better protection, and will have forgotten the warnings of the profession and the press that are constantly being dinged into their ears.

Why will the people who have money to spare ignore the present situation? The local conditions demand immediate relief. The state machinery that promises to build state sanatoria at Walker and at the state hospitals for the insane, is in need of a better lubricating fluid, and unless more attention is paid to the prevention and spread of the white plague, the tubercle bacillus will clog the wheels of the engine.

SURGICAL TREATMENT OF MENINGITIS

Otologists who are fearless operators will do much toward solving the treatment of purulent meningitis. The extreme caution of the average operator in mastoid surgery is due, in a large degree, to the fear of making a large opening into the mastoid or cranial cavity. This caution is often followed by an imperfect result or a failure to reach the extent of the diseased surfaces. A mastoid operation is usually a delicate procedure, so much so that injuries to the facial nerve and a resultant paralysis are the sequel of what might have been a brilliant outcome.

Then, too, a small abscess of the brain is overlooked on account of failure to explore well-known regions where abscesses may be confidently located. The mastoid region is the only place where drainage of the base may be attempted. Otogenic meningitis is not uncommon in ear diseases. The removal of virulent microorganisms is an important factor in treatment. Alexander, in *Deutsche Medizinische Wochenschrift*, for September 28, describes the technic in Politzer's clinic (*Journal A. M. A.*). The operation is done immediately on the ear. The entire diseased focus is removed, the dura is exposed and incised, and drainage of the intradural space by suction and aspiration of the fluid through the opening is made. Lumbar puncture is performed at the same time to determine whether a suppurative or a serous meningitis exists. This alone may be permissible, but when otogenic meningitis is evident the local operation is imperative.

The incision in the dura should be from 1.5 to 5 cm. long, and counter-openings made to promote ample drainage.

In suppurative diseases of the base or temporal regions of the brain there is little hope for recovery unless special surgical measures are thorough. To this end the removal of the bony wall must be extensive, the dura freely opened, and diseased surfaces of the brain removed, in order that deep-seated inflammatory or suppurative areas may be exposed and freely drained.

When the brain is invaded by an infective process nature can do nothing satisfactorily unless the surgeon furnishes a pathway. If the

drainage bed is ample there is a possibility of restoration, or a prolongation of life with comparative comfort, even though a partial crippling of the area remains. The majority of patients come to operation too late for recovery, but in a few cases the surgeon may safely make large excursions into the brain substance without material damage to the patient.

Some day the drainage of the base and the removal of suppurative products will be an accomplishment. The otological surgeon is the one to make the advances, but he must wield his instruments with a bolder hand than has been his custom.

Added to this frequent lumbar punctures seem rational measures to aid in diagnosis and to lessen the dangers from extension of pus-forming bacilli. These methods, capital as they appear, are less dangerous than temporization.

THE MEDICAL DEPARTMENT OF THE U. S. ARMY

During the last session of the U. S. senate a bill to increase the efficiency of the medical department of the army passed that honorable body, and was favorably reported by the military committee of the house of representatives, but too late to receive final consideration during the closing hours of the session. The bill which has since been prepared has been slightly altered, and will come before the present session of congress.

The bill has the hearty approval of President Roosevelt, Surgeon-General R. M. O'Reilly, and Secretaries Root and Taft.

This bill offers a complete workable system, and the increase of cost is only a little over ten per cent above the present cost of the medical corps, but after the enlargement is completed, four years hence, the cost thereafter will be actually diminished under this act.

To-day the army is officered for a strength of 100,000 men, yet the medical department is sufficient for only 42,000. The president urges the highest point of efficiency to safeguard the health of the army, and he says: "If the medical department is left as it is, no amount of wisdom or efficiency in its administration would prevent a complete breakdown in the event of a serious war."

The surgeon-general calls attention to the fact that the mortality from disease in armies in war time greatly exceeds that from losses in battle. The statement has been proven by the experiences of the British army in the Peninsula, the paralysis of the Prussian army in its conflict with the French republic, and in the war with Mexico. Innumerable instances in other wars and in our recent war with Spain show conclusively the needs of a better organization in the medical department. The war between Japan and Russia has added further proof that a small nation that is willing to pay the increased price of an efficient medical service can overwhelm a larger army when the medical service is unprepared for emergencies.

The three primary duties of the Medical Department are—

1. To preserve the effective strength of armies (military sanitation).
2. To care for the sick and wounded.
3. To conduct the administrative work of the department.

Military science is now a well marked specialty in medicine, and must be in the hands of trained medical officers.

To attain these ends the bill provides for seniority in service, and examinations and promotions under a clearly outlined system, as well as for the establishment of a reserve corps of men who are found mentally, morally, and physically sound after an examination by a medical board.

The present bill is endorsed by the medical profession, and will undoubtedly pass in congress if sufficient attention is paid to it by medical men through their representatives. The Hon. Loren Fletcher, of Minneapolis, is on the military committee, and is known to be a representative who looks after not only the interests of his district, but the larger interests of the nation. Resolutions endorsing the bill should be adopted by the county and district medical societies, and forwarded to Mr. Fletcher as an evidence of interest and encouragement.

The present sanitary unrest in Panama is enough to arouse every medical man in the state to assist in every way the upbuilding of sanitary science.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular meeting of the Academy was held at the Commercial Club, St. Paul, Wednesday evening, December 6th. Dinner was served at 7 o'clock, and the meeting was called to order by the President, Dr. A. MacLaren, at 8:30. There were present forty members and three visitors.

Some amendments to the constitution, by-laws and standing rules were adopted, whereby the business of the Academy, aside from the election of officers, is placed in the hands of the Executive Committee, leaving the entire evening free for the consideration of scientific subjects.

Dr. A. R. Colvin read a paper entitled "The Microscopic, Macroscopic, and Radiographic Evidences of Bone Sarcoma." The paper was supplemented by radiographic demonstrations, microscopic sections, and the bone specimens. The subject was discussed by Drs. White, Stewart, A. Schwyzer, H. P. Ritchie, Gilfillan, and by Dr. Colvin in closing.

Dr. F. R. Wright, of Minneapolis, then presented his inaugural thesis upon "Acute Gonorrhoea in the Male."

Dr. Ohage presented a draft of an ordinance which he had prepared for the City Council's action relative to the preservation of game in cold storage. After considerable discussion a resolution was passed endorsing the ordinance.

The Academy adjourned at 10:40 o'clock.

ARTHUR W. DUNNING, M. D., Secretary.

WATONWAN COUNTY MEDICAL SOCIETY

The annual meeting of the Watonwan County Medical Society was held in Madelia, December 13, 1905.

Dr. B. H. Haynes, of St. James, was elected president, and Dr. C. O. Cooley, of Madelia, secretary. The attendance was good, and several unusually good papers were read and discussed. The papers were as follows:

"Cerebral Tumors," by Dr. W. J. McCarthy;
 "Typhoid Contagion," by Dr. W. H. Rowe;

"Anomalous Parturition," by Dr. John Williams; and "Is Ninety Per Cent of All Diseases in the Upper Abdominal Zone Due to Pathological Changes within the Gall-Bladder and Ducts." by Dr. C. O. Cooley.

C. O. COOLEY, M. D., Secretary.

CENTRAL MINNESOTA MEDICAL SOCIETY

The annual meeting of the society was held at Mora, Thursday evening, November 25, 1905, all members, except the secretary, being present. Dr. C. H. Cooney, of Princeton, was in the chair.

Dr. Cooney presented three special clinics, with papers, case-histories, treatment, etc. One case was a suprapubic operation for drainage of the bladder in a man of 65; the second was a gunshot wound of the abdomen; and the third was a compound fracture of the tibia and fibula, with non-union which required a second operation, wiring the bones, and the use of steel plates to secure close apposition.

Dr. H. B. Bacon, of Milaca, exhibited a working model of a new handy sterilizer which he has recently perfected.

Dr. A. J. Lewis, of Mora, read a paper entitled "On the More Uniform Fees for Life Insurance Examinations."

The following officers were elected: President, Dr. Jacob F. Whiting, Spencer Brook; secretary and treasurer, Dr. A. J. Lewis, Mora.

At the close of the meeting the members and their wives were given a luncheon at the residence of Dr. Lewis.

The next quarterly meeting will be held at Anoka, February 21st, at 4 p. m.

A. J. LEWIS, M. D., Secretary.

ST. LOUIS COUNTY MEDICAL SOCIETY

The annual meeting of the St. Louis County Medical Society was held on December 14th, at the Spalding Hotel in Duluth. A banquet was given by the society, to which invitations had been extended to all regular physicians in the territory (three counties). Forty-one physicians were in attendance.

After the banquet the following officers were elected for the ensuing year: President, Dr. M.

K. Knauff, Two Harbors; first vice-president, Dr. R. Graham, Duluth; second vice-president, Dr. Mary McCoy, Duluth; secretary and treasurer, Dr. C. W. Taylor; delegates, Drs. C. F. McComb and C. A. Stewart, Duluth; alternates, Dr. S. H. Boyer, Duluth, and Dr. W. E. Harwood, Eveleth.

Nineteen new members were received during the year.

C. W. TAYLOR, M. D., Secretary.

NEWS ITEMS

Dr. C. J. Beise, formerly of Minnesota Lake, is now located in Mankato.

Dr. F. F. D. Scholten, of Winnebago City, has decided to move to Frost.

Dr. D. Graham, of Duluth, has been in Chicago doing special work in surgery.

Butte, Mont., has established hospital quarters in its court house for drug fiends.

Dr. W. Y. Corry has given up practice at Hannah, N. D., and will spend several months in post-graduate work in Chicago.

Dr. Daniel Tufte, of Pelican Rapids, has decided not to locate in Fargo, as he contemplated doing, but will move to Fergus Falls.

Drs. Walker & Geyerman, of Worthington, have established a fully equipped x-ray laboratory, and will do work for the profession.

Dr. W. T. DeCoster, of Windom, has opened a hospital, and has associated with him Drs. Walker and Geyerman, of Worthington, as surgeons.

Dr. F. M. Rose, of Faribault, was taken seriously ill two weeks ago, and was taken to St. Mary's Hospital, Rochester, for an operation for gall-stones.

Dr. D. M. Cool, of Faribault, died on December 14th. Dr. Cool graduated from Rush in 1883, and had practiced in Faribault for twenty-two years.

The county commissioners of Norman county have asked for sealed bids for the treatment of the poor of the county. West St. Paul recently obtained a "poor" physician in this way. It's cheap!

Some one is kind enough to send us, occasionally, and anonymously, a news item, usually announcing a death. We are glad to have such items sent us, but we would like the name of the sender.

The new hospital that the citizens of St. Peter are helping to build will be in charge of the Sisters of Mercy. The building will cost about \$10,000.

The citizens of the East Side in Minneapolis have raised money for a hospital. A four-story building has been purchased at a cost of \$24,000, and will be put into first-class shape for a hospital large enough to accommodate fifty patients.

Dr. J. I. Durand, state University, '05, who is now in the City and County Hospital of St. Paul, has received a very flattering offer of a partnership with Dr. Emery Marvel, of Atlantic City, N. J., which he will accept at the end of his year of hospital work.

Dr. F. H. Allen, who has been practicing at Staples for several years, and has decided to locate elsewhere, was banqueted by the citizens of that city last month. It was one of those occasions that show physicians the high standing they have in a community, but which they do not feel until they decide to leave.

Dr. Theodore L. Hatch, of Owatonna, recently lost his office, with all its contents, by fire. His library was the accumulation of thirty-five years, and contained many interesting and, perhaps, some out-of-date medical works. Among the former or the latter, or both, was a complete file of the NORTHWESTERN LANCET, which the doctor wishes to replace.

The Hennepin County Graduate Nurses' Association held their annual meeting last month. Miss Carrie Rankillour presided in the absence of the president, Miss Edith Rommel, who sent Christmas greetings from California. Dr. J. C. Litzenberg read a paper on obstetrics, and the program for the Christmas entertainment was presented by Miss Marie Jamme.

A jury of twelve doctors was called in Helena, Mont., last month to hear a case appealed from the State Board of Medical Examiners, who had refused to grant Dr. John T. Foley, of Great Falls, a certificate. The jury was the first called under the new law. The State Board was upheld and the case will go to the Supreme Court of the state.

The annual meeting of the Crow River Valley Medical Society was held at Litchfield, December 13th. The following were elected officers for the current year: President, Dr. E. Hildebrandt, Forest City; first vice-president, Dr. W. J. Austin, Watkins; second vice-president, Dr. J. H. Kaufman, Dassel; treasurer, Dr. W. E. Chapman, Litchfield; secretary, Dr. J. W. Robertson, Litchfield.

The Blue Earth County Medical Society, at its annual meeting last month, elected the following officers: President, Dr. J. S. Holbrook, Man-

kato; vice-president, Dr. John Williams, Lake Crystal; treasurer, Dr. Lida Osborne, Mankato; secretary, Dr. A. G. Liedloff, Mankato; delegate, Dr. J. W. Andrews, Mankato; alternate, Dr. F. U. Davis, St. Clair. Dr. J. B. Tyrell, of Waterville, and Dr. A. F. Schmitt, of Mankato, were received on transfer cards.

The Mitchell District Medical Society of South Dakota, one of the largest societies in the Northwest, held its annual meeting Dec. 15th in Mitchell, the attendance being the largest since the society was organized. Several papers were read, and the discussion was very full. The following were elected officers for the current year: President, Dr. W. R. Ball, Mitchell; vice-president, Dr. T. B. Smiley, Mt. Vernon; secretary, Dr. E. F. Reamer, Mitchell; treasurer, Dr. F. W. Fryberg, Mitchell; delegate, Dr. G. A. Clauser, Bridgewater; alternate, Dr. A. J. Gifford, Alexandria.

The following are items in the new fee-bill adopted last month for the Mitchell (S. D.) District Medical Society: A call at residence, \$1.50; night visit, \$2 to \$5, from 10 p. m. to 7 a. m.; mileage, first three miles from city, per mile one way one dollar, additional mile 50 cents; mileage at night per mile one way, first 10 miles, one dollar per mile, after that 50 cents per mile; consultation at office or over telephone, \$1 to \$10; consultation with another physician, with mileage added, \$5 to \$10; vaccination at office, \$1; life insurance examination, \$2 to \$10; giving an anesthetic, \$5 to \$10.

PHYSICIAN WANTED

A Norwegian physician is wanted at Lankin, N. D., where the population is mostly Norwegian. For further information address B. B., care of this office.

FOR SALE

The best drug store in the best town in eastern South Dakota; pays splendid profit, and will continue to do so; good reason for selling; stock will invoice about \$10,000; part time if desired; occupant also owns store building, and will sell or rent. This is an unusual opportunity. Write at once for full particulars, P. O. Box 501, Minneapolis, Minn.

PRACTICE FOR SALE

In a town of 350 in Southern Minnesota, mixed nationality. Practice established seven years; no competition; nearest town eight miles; country thickly settled. Practice goes to purchaser of my residence, new and modern, and cost \$1,600. One-third cash. Will introduce successor. Reason for selling, I am going to the city. This is a bargain. Address "E," care of this journal.

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THE PRESENT STATE OF OUR KNOWLEDGE CONCERNING THE THERAPEUTIC VALUE OF THE X-RAY*

BY BURNSIDE FOSTER, M. D.

ST. PAUL

It is now nearly ten years since Professor William Conrad Roentgen, Professor of Physics at the Royal University of Wurtzburg, communicated to the Physico-Medical Society of Wurtzburg his discovery of the phenomenon of what we now speak of as the x or Roentgen rays. Never before in the history of science or of medicine has a discovery been so eagerly seized upon and so quickly turned to practical use, and the marvelous properties of this new form of radiation produced a sensation throughout the scientific world such as had never been experienced before. At first the physical properties of the x -rays, which rendered certain opaque substances transparent, were the only subject of study and investigation, and it was at once apparent that as an aid to diagnosis, medicine had received from science the greatest gift of all time. The possibilities of the x -ray as a diagnostic agent have not been exaggerated, and it is more than probable that, with the improvement of apparatus and technic, we have still more to gain in this direction.

When, shortly after the use of the x -ray became general throughout the medical world, reports began to come from various workers of the effects of this form of radiation upon living tissue, a

*Read before the Minnesota State Medical Association, June 1, 1905.

still greater sensation was produced, a sensation for which the hasty and immature reports of some physicians were partly responsible, but which was magnified, exaggerated, and spread broadcast by the newspapers of the world. It was declared and believed by many, both in and out of the medical profession, that at last a cure had been discovered for cancer, tuberculosis, and many other of the most dreaded of human maladies. As has happened frequently before in the history of medicine, the world was doomed to a bitter disappointment; a reaction followed, and the pendulum is now beginning to swing too far, it seems to me, in the other direction. To be too sceptical is as unfortunate as, or perhaps more unfortunate than, to be too enthusiastic. We undoubtedly have in the x -ray a therapeutic agent of immense value, one which, in proper hands and in the hands of those who appreciate its limitation, is capable of doing an immense amount of good, and it seems to me that at the end of the first decade of history we are in a position to take a calm and dispassionate view of the whole situation, and try and place the x -ray where it belongs among our therapeutic measures. This paper is intended as a brief contribution to the discussion of the actual therapeutic value of the x -ray, and is written from the viewpoint of my personal experience.

The most frequent use of the x -ray hitherto has been in the treatment of malignant disease. Here its limitations are pretty sharply defined, it seems to me. The x -ray may be depended upon to cure the majority of cases of circumscribed cancer of the surface of the body. To be sure, the knife, the curette or the actual or chemical cautery will usually accomplish the same purpose, and accomplish it more rapidly, and these methods are in many cases the ones to be advised, but these methods are all painful and leave a much more disfiguring scar. The x -ray is to be preferred to any other treatment for the small, superficial cancers near the eyes and mouth where the cosmetic result is of so much importance. In most of these cases the careful use of the curette should precede the x -ray treatment. The x -ray should never be used in operable, deep-seated cancer. Here the knife is the only safe method to be used, although I believe that the x -ray may be of great value, after operation, in destroying superficial cancer cells which may have escaped the surgeon's knife. In inoperable cases, or in recurrent cases where the consensus of surgical opinion is against further operation, the x -ray offers to the patient relief from pain, a retardation of the growth of the disease and a postponement of the inevitable. In a few cases deep-seated malignant disease has undoubtedly disappeared under the x -ray treatment; but every surgeon knows that there is a form of atrophic cancer which will sometimes undergo spontaneous absorption or atrophy, and disappear without any treatment. Perhaps the x -ray has in these cases aided the process of atrophy of the disease. It is impossible by any diagnostic method at our disposal to tell which cases—and they are very rare—will disappear in this way, and as the element of time is of such immense importance in the treatment of cancer, the use of the x -ray, which by its delay is more than likely to transform an operable case into an inoperable one, is not justified until competent surgical authority has declared against operation. Taking this conservative view, which in the present state of our knowledge I believe to be a fair one, of the use of the x -ray in the treatment of malignant disease, it will be seen that we have in this agent a very valuable method of treatment in the hands of one who understands when and how it should be used, and at the same

time a method which, in ignorant or unscrupulous hands, is capable of doing infinite harm.

Tuberculosis.—Tuberculosis of the skin whether in the form of lupus vulgaris or in cases of simple tubercular infection of the skin, yields readily to the x -ray in the majority of cases, and I believe that this is the best treatment at our command. The extensive tubercular lesions the curette, the cautery or the knife are often indicated as adjuncts to the x -ray. The treatment of lupus by the Finsen light, as carried on in Copenhagen, has not been given a fair trial in this country, but, judging from my own experience in the treatment of lupus with the x -ray and a study of literature concerning the Finsen light treatment, I believe that the x -ray will accomplish all that the Finsen light will, and in a much shorter time. The treatment of lupus erythematosus with the x -ray is not very satisfactory, although a few of my cases have been very materially improved.

In tuberculosis of the glands, particularly of the neck, x -ray treatment has apparently been very beneficial in some of the cases in which it has been used, but the well-known tendency of these tubercular glands to disappear under proper general treatment, makes it difficult to determine in a given case how much of the improvement is to be credited to the x -ray. I have had several experiences which have made me believe that this method of treatment is a valuable one, and since it certainly can do no harm, and good results have followed it where other means have failed, and as I am opposed to the promiscuous use of the knife in these cases, I feel justified in advising it in suitable cases.

Acne.—The x -ray treatment of this disease, in all its forms, has been found to be more satisfactory than any other method of treatment that I have ever used, and my patients, almost without exception, have been delighted with the results obtained. The oily seborrhea which so frequently accompanies acne disappears, the pustules dry up, and the deep indurated papules fade away, leaving very slight, if any, scars. The treatment is slow and tedious in many cases, but the final results are excellent. The disease frequently recurs, but the recurrences quickly yield to the same treatment. I always, of course, go into the question of diet and general hygiene with these

patients, and make use of internal remedies where they are indicated.

Sycosis.—This is another disease in the treatment of which I depend almost entirely upon the x -ray. The point of treatment in sycosis is the complete epilation of the diseased area, and I know of no more satisfactory method of epilation than by the x -ray. Of course, in those cases of sycosis—and they are numerous—where the infection of the skin is caused or maintained by discharges from the nose, the intranasal condition must also be treated.

In the disease still spoken of as parasitic sycosis, which is a form of ringworm, and should be called tinea sycosis or trichophytosis, the x -ray treatment is also very satisfactory as a means of epilation. It does not, however, destroy the trichophyton, which is the cause of the disease. In the treatment of ringworm of the scalp in children, the x -ray is by far the most valuable means at our command.

Eczema and Pruritus.—Localized patches of chronic eczema, which have resisted local treatment, will frequently fade away after a few x -ray exposures, and the itching is often very quickly controlled. The x -ray has not a very wide field of usefulness in the treatment of eczema, but in some cases it is a valuable aid to other measures. In pruritus ani and pruritus vulvæ it is sometimes useful, but I have had better results with the Geissler tubes and high frequency current.

Psoriasis.—In this disease my results have not been satisfactory, although in a few cases I have seen patches disappear which the ordinary local measures had failed to remove. The x -ray has apparently no effect in preventing the recurrence of psoriasis.

There have been numerous and trustworthy reports of good results following x -ray treatment in Hodgkin's disease, and I have had one case where I was satisfied that improvement followed the treatment. So far, however, as my present knowledge and experience goes, I should not feel justified in promising very positive results, and I certainly should not feel justified in dispensing with other methods of treatment.

I have used the x -ray in two cases of exophthalmic goitre, and with apparent benefit. It must

be considered simply as an adjunct to other methods, in this disease.

I have said nothing about the treatment of sarcoma by the x -rays because this paper is intended simply to record my own experience, and my experience in the treatment of sarcoma has been very limited. In one case of inoperable sarcoma of the orbit there was at first very marked diminution of the size of the tumor and great apparent improvement in the condition of the patient, but this improvement was only temporary, and the patient finally died of the disease. His life, however, was undoubtedly prolonged, and he was made more comfortable for a time by the treatment.

There is one thing that must always be borne in mind in regard to the x -ray, and that is that it acts very differently upon different people. I have frequently had several patients with almost exactly similar conditions under treatment at the same time, and under circumstances as nearly as possible the same in every case. They were treated with the same tubes, and the distance from the tube and the time of exposure were precisely the same. Some would respond quickly, some slowly, and some not at all. This can be explained, if it be an explanation, only by assuming that individual susceptibility to the x -ray varies very much. So far as x -ray burns are concerned, this, in my opinion, is undoubtedly the case.

In concluding this brief paper, I wish to emphasize my belief that deep-seated malignant disease should never be treated by the x -ray until the resources of surgery have either been exhausted or refused by the patient; as well as my belief that patients suffering from inoperable malignant disease should be given the benefits of x -ray treatment if they desire it, and that this treatment will usually be followed by improvement, and that there is always the possibility of cure. In my opinion it is both cruel and unjustifiable to tell such a patient that he is doomed to die, and that nothing can be done for him.

DISCUSSION

DR. J. CLARK STEWART (Minneapolis): I think Dr. Foster is to be congratulated upon the conservative position he has taken in regard to the x -ray treatment. As he says, the idea has been pushed to an extreme of enthusiasm, and I think the position he has taken is exactly the proper one. I do not be-

lieve that any operable malignant tumor should be primarily subjected to *x*-ray treatment with the exception of certain small epitheliomata of the eyelid, ear, or nose where the cosmetic results of *x*-ray treatment are better than can be obtained by any surgical procedure. Epithelioma of the of the lower lip is to be carefully excluded from epithelioma of the face in general as to the propriety of its treatment by *x*-ray. I do not believe that lip epithelioma should ever be treated primarily by the *x*-ray because the almost invariable sequence of such treatment is recurrence in the cervical glands.

As to the effect of the *x*-ray after operations upon tumors to prevent recurrence there is a great deal of doubt. Some wonderful results have apparently followed this treatment. Personally, I have had one very surprising experience in a case of melanosisarcoma of the back of a fifteen-year-old child. Dr. J. E. Moore removed the tumor by the knife, not going very wide of the infiltrated area, and partially closed his operative wound, and turned the patient over to me for *x*-ray treatment. This was kept up for about a month, during which time the wound healed, and now after over two years there has been no recurrence. This tumor was diagnosed microscopically and was undoubtedly melanosisarcoma.

Another interesting case was adenocarcinoma of the eyeball, where the other eye was practically blind and where the *x*-ray treatment was successful in destroying the tumor and preserving the eye. This tumor had been removed eleven times by the knife before the *x*-ray treatment, and has now remained well for about two years.

In regard to the treatment of tubercular skin lesions, I think there is no question but that the *x*-ray is of immense value and its results more satisfactory than those obtained by other methods of

treatment. In skin diseases I have had little experience, that little being in the treatment of facial acne where the treatment has proved entirely satisfactory.

As to treating hopeless malignant tumors for the small amount of benefit which can be derived, I think the understanding with such patients should be very clear, that the good to be obtained is only temporary and of a palliative nature. A great many cases are being treated by *x*-ray all over the country, and people often think they are being cured when there is no possible chance of such a result, and only temporary comfort can be obtained.

DR. BURNSIDE FOSTER (Essayist): There is nothing to me more mysterious in the whole realm of surgery than to read the reports of those cases of undoubted malignant disease where the malignancy has been demonstrated, where the surgeon has declined to operate, and where, after a time, the tumor has disappeared and the patient recovered. A distinguished London surgeon collected a report of some fifty such cases. I cannot help believing that these cases of malignant diseases which disappear under the *x*-ray treatment must belong to that class of disappearing malignant tumors. They do disappear in a considerable number of cases. I have one under observation that disappeared in such a manner, and I do not know whether it was the result of *x*-ray treatment or not.

In regard to malignant diseases of the lip; if there is a form of cancer of the lip that may be treated by the *x*-ray it is cancer of the upper lip and not of the lower lip. I have treated two such cases with good success. My invariable rule in all such cases is, that the patient must have seen a competent surgeon who has declined to operate before I will undertake *x*-ray treatment. That is the only safe stand to take.

DIAGNOSIS OF GALL-STONE DISEASE*

By G. G. EITEL, M. D.

MINNEAPOLIS

According to Riedel, Kehr, Recklinghausen, and Brewer, every tenth human being, on an average, has gall-stones; and of elderly women perhaps every fourth. In a great majority of cases the stones have never given rise to symptoms of sufficient severity to have caused them to be recognized during life. Probably not more than ten per cent of all cases are ever recognized, nor do they even give sufficient symptoms to lead the patient to consult a physician.

Gall-stone disease, as is very readily seen, must necessarily present extremely variable phenomena. A common picture of this disease does not exist at all. There was a time when biliary colic, and the icterus following it, were known as the only characteristic symptoms. However, it finally

became established that very many cases of biliary colic are not followed by jaundice; and the original circumscribed picture of gall-stone disease gradually expanded in an extraordinary manner, precisely as did the pictures of osteomyelitis, of appendicitis, and of other diseases. Here is presented to us an extremely mild disorder that can hardly be called disease. This, of course, is one end of the scale. But then a patient is brought to us somnolent, apparently septic, and falling a prey to a speedy death,—that is the other end of the scale. Between the two extremes we find a series of pictures too numerous to be described in a paper so limited in extent as this one necessarily must be.

Gall-stone disease is more common in women, and is more easily diagnosed in those who have

*Read before the Minnesota Valley Medical Society, at Mankato, December 2, 1905.

given birth to children, on account of the generally relaxed condition of the abdominal wall.

If the gall-bladder be well filled mainly with stones, the size of the tumor, which is usually pyriform, will be found unchanged by examinations made at intervals of days or even of weeks. On the other hand, if the contents of the gall-bladder be composed mainly of fluid, the size of the tumor may vary greatly in the course of even a few days, from the size of a large fist (and consequently it is easily made out by percussion and palpation) to that of a normal bladder, and, therefore, impossible to be made out by the most careful examination.

There are patients who have a gall-bladder of normal size, of which the wall is soft and thin, and whose cystic duct is patulous. The bladder may contain a number of stones and normal bile. Patients with such a gall-bladder may at times notice something slightly wrong in the epigastrium and hypochondrium, especially after eating a certain kind of food, or after eating more than is required to satisfy the appetite. Others are nervous and easily annoyed. Some of these patients notice that riding in a carriage or street-car does not agree with them; others cannot endure riding backwards without getting a little "sea-sick" (Riedel). Doing house-work, washing, stepping from a chair to the floor, etc., may bring on a slight pain in the region of the liver or stomach. There is generally no discomfort experienced on pressure over the gall-bladder. In such cases calculi remain in the gall-bladder, or, in other words, do not become engaged in the cystic duct. The bile is normal, and passes undoubtedly into and out of the gall-bladder as though no calculi were present. Such persons may live to old age without even suspecting that they harbor gall-stones.

Rare cases exist where the patient (usually a woman) discovers a tumor in the right side, which may sag down as far as to Poupart's ligament. This tumor, which is really a gall-bladder filled with stones and fluid, may easily, on superficial examination, be mistaken for a floating kidney. Such patients may not suffer very much, nor ever have a rise in temperature. It does, of course, happen in such cases that even after years a stone finds its way into the cystic duct, or this tumor may become injured in some way, and thus

at once produce a very different picture. In the epigastric region there may be pain of great severity, especially of a colicky nature, and accompanied by nausea and vomiting. There may be abdominal distention and great rigidity of the upper part of the right rectus abdominis muscle, with or without elevated temperature, but as a rule severe colic is followed by some rise in temperature.

These symptoms may last only five or ten minutes, or may continue for hours or days, after which they may gradually subside and leave a tenderness in the region of the gall-bladder. Such an attack may or may not be followed by jaundice. The stone may have become engaged only in the pelvis of the cystic duct, and after a time the muscular structure of the portion of the duct in which the stone became lodged, becomes exhausted and relaxed, and consequently the stone may float back into the gall-bladder. It may, however, pass on into the common duct, where it may become lodged indefinitely; or it may speedily advance into the duodenum. In any of the three instances jaundice may follow and persist for a longer or shorter time. In case of the stone passing into the cystic duct only (where it may remain or from where it may return into the gall-bladder) a congestion or a cholangitis may supervene, and extend into the hepatic and common ducts, or be of sufficient severity to cause obstruction and the consequent jaundice and clay-colored stools. Even in cases where the stones become lodged in the common duct, icterus need not be constant, since the tissues around the stone become relaxed and allow the bile an unobstructed flow.

In cases of a cholecystitis and cholangitis, there will be rise in temperature from 90° to 106° , depending upon the extent of involvement of the deeper structure, namely, the bile ducts and the liver itself; and should an operation be made some time after the attack, it will be found that the gall-bladder is united by adhesions to the omentum, colon, and even to the pylorus and duodenum, and the bile ducts more or less thickened. It should also be noted here that very frequently adhesions about the gall-bladder of even considerable extent are encountered in patients who give absolutely no history of ever having suffered attacks of cholecystitis, or at least

not of cholangitis; yet a low grade of inflammation of the gall-bladder, extending to the serosa of the latter, must have existed, and probably at various times.

Ordinarily, the diagnosis of simple gall-stone disease is readily made, and is based upon the pain in the region of the gall-bladder, and also in the median line of the abdomen at a point about midway between the xiphoid process of the sternum and the umbilicus. The pain may radiate either to the right or the left, into the back, and quite often under the surface of the right shoulder-blade. Very often it is a distinct colic, lasting from a few minutes to hours, and is frequently followed by nausea and vomiting, being frequently relieved by the latter through the resulting relaxation.

Many patients who have gall-stones are troubled with dyspepsia, and give the history of some gastric disorder. In many of these cases there are, as already mentioned, adhesions between the gall-bladder and the duodenum and stomach, which most likely accounts for the functional disturbance frequently met with.

Pyloric or duodenal ulcers may simulate the symptoms of gall-stones, but should be quite easily differentiated from the latter, since the pain in ulcer comes on regularly one or two hours after eating, while in gall-stone pain may be entirely absent after the ingestion of food.

Appendicitis is also to be reckoned with, though in this disease the most common seat of pain and tenderness is at McBurney's point. It should, however, be remembered that the appendix is not infrequently found in the region of the gall-bladder, and that the co-existence of the two diseases is exceedingly common.

A floating kidney on the right side frequently gives symptoms that make one think of gall-stones, but they can usually be cleared up by having the patient wear a suitable pad and binder with which the kidney may be held in place, and thus prevented from dragging on its blood-vessels and nerves. There is also less tenderness in the region of the gall-bladder, in a floating kidney than in gall-stones.

In right renal colic the concomitant urinary symptoms and condition, with the pain over the kidney passing down the right genitocrural nerve into the testicle or vulva and thigh, are distinctive.

In lead colic the more or less persistent gastralgia, the constipation, the absence of the usual gall-bladder symptoms, and the presence of a blue line on the gums, will usually aid in the diagnosis, and potassium iodide and salines will readily clear up the symptoms.

In pyloric stenosis, if accompanied by adhesions around the pylorus, the symptoms are not unlike those of gall-stones, with which, in fact, the affection may be associated (Mayo Robson).

Cancer of the gall-bladder and bile-ducts is, primarily, rather a rare affection, and about 87 per cent of all cases, according to Tyson, are associated with gall-stones. While some writers and teachers are of the opinion that gall-stones are often caused by the malignant condition, the great majority do, however, hold the opposite view, that the gall-stones are the cause of the new growth, while still others are of the opinion that the two diseases are simply a coincidence.

When a patient with primary cancer of the gall-bladder or bile ducts presents himself for examination, he is, as a rule, more or less jaundiced. There is generally a palpable tumor, which can be readily made out, and which moves with respiration. This tumor may or may not be tender on palpation or percussion, and its surface may seem rather smooth to the palpating fingers, and the diagnosis, is not always made before an exploratory operation. The idea of primary and secondary carcinoma of the organs surrounding the gall-bladder should always receive due consideration before arriving at a definite conclusion. (Primary carcinoma of the liver is never met with.)

Parasites in the bile-ducts, such as round worms, as have been found in one case by the writer, may produce obstruction to the flow of bile, a condition of course which is very difficult to make out before an exploratory operation is made.

diagnosis is not always made before an exploratory operation. Permanent contracture of the muscles, notably of the flexor group in the forearm, may develop within a very short time after the application of a splint that exercises undue compression. It is a wise rule to inspect all fracture dressings within twenty-four hours; and when this is not expedient special care should be exercised, when applying the dressing, to avoid compression.—
American Journal of Surgery.

A CASE OF RENAL DECAPSULATION FOR CHRONIC BRIGHT'S DISEASE*

By L. F. SCHMAUSS, M. D.,

MANKATO, MINN.

In reporting this case of kidney operation, I cannot do so, owing to the nature and importance of the subject, without making some foregoing and concluding remarks, to facilitate the discussion. In fact, to bring this subject up for discussion was the principal object of this paper. When the honored chairman of our program committee asked me for the title of a surgical paper to be read before this meeting, it occurred to me that this topic, which is of such vast importance to medical science, would be of general interest, and could be discussed with profit to all present. But when we consider the importance of chronic Bright's disease, for which this operation was performed, for, as you are aware, renal decapsulation, total or partial, is also being done, and had been done previously, for other conditions than chronic nephritis, e. g., the relief of renal colic and hemorrhage, prolapsed kidney, and, more recently, suppression of urine, puerperal eclampsia, etc.—when we further consider the newness of the operation for Bright's disease, the fact that for the latter condition it is still on trial, and has, besides its few advocates, many opponents, principally on theoretical grounds, and the further fact that this subject has not to my knowledge been before taken up by this society, I hesitated to introduce it, well realizing the responsibility.

It is not my intention, nor would time allow, to go into the various details related to chronic Bright's disease—such as the etiology, pathology and medical treatment, with which you are all familiar—nor at length to discuss the history and pros and cons of Edebohls' operation, for this has been well presented in medical literature during the last two years.

While it is desirable and valuable, from a scientific standpoint, to know why and how a given remedial agent (therapeutic measure) acts, certain conditions and effects are brought about,

and, while it is nothing but justice and the least acknowledgment we can bestow upon those achieving results in new and important fields, to give credit where it belongs, still, what principally interests the general practitioner and surgeon is, does renal decapsulation or decortication cure—or at least favorably influence chronic Bright's disease?

Before attempting to answer this question, let me briefly refer to the interesting history of renal decapsulation as an operative procedure, and as finally applied to the treatment of chronic nephritis, and of other surgical measures directed to favorably influence Bright's disease, or, rather, some of its grave manifestations.

Decapsulation of the kidney had been practiced for years before Edebohls and Ferguson by E. Rose in his nephropexis. The same was later practiced by Lobstein and others, and especially by Edebohls and Ferguson—intentionally or accidentally—during the same operation. It was thus incidentally discovered by Edebohls, in connection with five cases of floating kidneys and co-existing nephritis operated by him during 1892-93-96-97, that the fixation of the prolapsed kidney or kidneys with partial decapsulation favorably influenced or cured the accompanying nephritis.

This observation led him, on January 10, 1898, in a similar case, to perform bilateral decapsulation and fixation with the deliberate idea to favorably influence the then existing nephritis. This last operation must be looked upon as the first operation performed for chronic nephritis (Bright's disease) diagnosed as such before operation. These six cases, with the conclusions drawn therefrom, including the proposition to treat chronic nephritis affecting a movable kidney by decapsulation and fixation, were published by Edebohls in the *Medical News*, New York, April 22, 1899. His formal announcement, "To attempt a cure of chronic nephritis by surgical

*Read before the Minnesota State Medical Association, June 1, 1905.

intervention, whether the kidney be movable or in place," appeared in the *Medical Record*, New York, May 4, 1901. December 21, 1901, in the same journal, he gives the histories and results of 18 cases thus operated upon, together with the technic of the operation, and concludes: "As the result of my experience thus far, and from my present standpoint, I am prepared to operate upon any patient with chronic Bright's disease who has no incurable complication, or one absolutely forbidding the administration of an anesthetic, and whose probable expectation of life without operation is not less than a month." This practically also defines his position at the present date. In 1903, in the *Medical Record*, New York, of March 28, the same author reports 51 cases of renal decapsulation performed by him for chronic Bright's disease, giving a table of the cases permanently cured, and the histories of the fatal cases, etc. In summarizing, he says: "The general practitioner, in the present state of our knowledge, owes it to himself and to his patient to accord practical recognition to two important facts. The first of these facts is that chronic Bright's disease, at least in its earlier stages, before irreparable and fatal damage has been inflicted upon the kidneys, the heart, the blood vessels and the nervous system, is curable or susceptible of amelioration, by renal decapsulation. The second fact is, that renal decapsulation in the earlier stages of chronic Bright's disease is, in competent hands, attended by little or no risk of life." In 1904, in the *New York Medical Journal* of May 21 and 28, Edebohls, in a masterly review of his operation, taking up in particular the *modus operandi*, the local changes produced, the indications and contraindications, etc., concludes as follows: "For the present, in view of the helplessness of medicine in the presence of established chronic Bright's disease, the advance in treatment represented by renal decapsulation should be welcomed by every physician called upon to treat chronic nephritis. Nor is the physician justified in taking the position that only after all other measures have failed, as fail they must, will he resort to decapsulation. That is giving neither the operation nor his patient a fair chance, to which the latter, at least, is certainly entitled. For even at the present writing we are able to affirm, as the result of experience,

that renal decapsulation applied early in the course of a chronic nephritis, and in the absence of complications, is almost free from danger in expert hands, and is almost a certain cure. Why, then, wait until the inevitable all-around breakdown in health, which is sure to come in every case of chronic Bright's disease, forces us to operate in the last stages of the disease, perhaps upon a dying man or woman, with all the gloom that invests such an occasion, or else to abandon the unfortunate sufferer to his or her fate?" In the fall of the same year this same author, in his valuable monograph, "The Surgical Treatment of Bright's Disease," including also his former articles on the subject, gives the histories in full and analysis of results of operation of 72 patients upon whose kidneys he had operated up to the end of 1903, with the hope of curing or improving existing chronic Bright's disease. Of the 72 cases 7 died within two weeks after operation (9.7 per cent), 22 died remotely, none being due to the operation; 3 were unimproved as far as urinary findings were concerned, but improved in general health; 20 experienced decided improvement in general health and in the condition of the urine, as the result of operation. A majority of the 20 appear to be on the high road to complete health, and bid fair to figure among the cures of his next report; 17, or 23.6 per cent, were cured of chronic Bright's disease as a result of the operation, and remain cured at periods after the operation varying from one year and four months to ten years, the average duration being over four years; the three remaining cases disappeared from observation after leaving hospital, and no trace could be found of them. Of the entire number of 72 patients, therefore, 13 received no benefit from operation, while 59 experienced amelioration varying all the way from slight and temporary improvement to complete cure. In nine cases the operation proved directly life-saving by rescuing the patient from immediate impending death. In concluding, Dr. Edebohls remarks: "In judging these results the fact should be borne in mind that the immense majority of my patients came for operation only after all other measures and treatment had failed to arrest the unrelenting deathward progress of their chronic nephritis. The evidence submitted, in the author's opinion, not alone jus-

tifies the surgical treatment of chronic Bright's disease, but establishes surgery as at present the main, if not the only, hope of sufferers from a hitherto incurable malady."

During the period Dr. Edebohls, of New York, was making his observations on the effects of renal decapsulation and fixation in cases of floating kidney associated with nephritis, Dr. Ferguson, of Chicago, developed similar ideas. In his experience with the fixation of floating kidneys he found that those cases where decapsulation, to a greater or less extent, with or without multiple punctures, was added to the operative procedure, were more certainly relieved from their symptoms than when but simple nephropexy was performed instead. June 17, 1896, he operated on a right floating kidney complicated by nephritis by decapsulation and fixation. September 9, 1897, he performed his first double decapsulation and fixation for floating kidney, complicated by interstitial nephritis. No cure of the nephritis was expected, decapsulation being performed with the object simply of relieving her pain and tenderness. She was, however, two years later, symptomatically cured of her Bright's disease. From this time on (September, 1897) he frequently expressed his opinion in his clinics that all tender and floating kidneys were cases of interstitial nephritis, and would be symptomatically cured by stripping off the capsule and suspending the kidney. But he had no idea of curing or favorably influencing chronic nephritis as such by decapsulation, as was done by Edebohls January 10, 1898. On December 16, 1898, in a discussion on "Movable Kidney," Ferguson expressed himself as follows: "The kidney being exposed, its condition is to be considered. If there be a firm adherent capsule to the kidney, it had better be stripped off, as, for instance, in interstitial nephritis. I do not wish to be misunderstood with reference to removing the normal capsule of a kidney. I condemn this, and do not do it. But the peeling off of a thick, pathologic capsule is a thing that is desirable." On Jan. 4 and 14, 1899, Ferguson operated upon two uncomplicated cases of acute or subacute cases of nephritis, which were not diagnosed as such until disclosed by microscopic sections after operation. In the first a stone was suspected, and exploration advised. Multiple punctures were made, the kid-

ney decapsulated and suspended. In the second an operation was undertaken upon the diagnosis of "septic kidney." The kidney was incised (for drainage), decapsulated, and suspended. Both cases were cured of their nephritis. These two cases, with the cases previously mentioned, were related by Ferguson to the Chicago Academy of Medicine on Feb. 10, 1899, (a month after operation) under "The Surgical Treatment of Nephritis or Bright's disease," and reported in the Journal of the American Medical Association, March 18, 1899. It appeared as an original article in the Medical Standard of June, 1899. Edebohls' first publication appeared April 22, 1899. July 4, 1903, in the Journal of the American Medical Association, Ferguson reports quite a number of cases of Bright's disease operated upon, and is enthusiastic over the results. In concluding, he remarks: "I have no hesitation in affirming that decapsulation of the kidney in acute, subacute and chronic nephritis, both interstitial and parenchymatous, is a practical and effectual surgical procedure." April 16, 1904, same journal, he reports three additional cases, and under general remarks concludes: "The vast majority of deaths in connection with renal decapsulation must not be attributed to the operation. Even allowing all deaths within a week to be due to the operation, there would be a mortality of about 9 per cent. When the limitations of the operation are more clearly defined, and many of the extreme cases left alone, the mortality should not be more than 5 per cent in the hands of experienced surgeons. It is fair to conclude that the earlier an operation is performed in these cases, the less will be the fatality and the greater the benefits."

The other surgical measures to be considered with decapsulation in the treatment of Bright's disease, or rather for the relief of some of the graver symptoms or pressing indications, such as renal colic, hematuria and suppression of urine, etc., are nephrotomy, renal puncture, nephrolysis and nephrectomy.

In January, 1896, R. Harrison reported three cases presenting acute renal symptoms, in which he undertook exploratory nephrotomy—for abscess in one and stones in the other two, but found simply nephritis instead. The symptoms disappeared as a result of the surgical interven-

tion. About the same time D. Newman reported four cases of nephrorrhaphy, in which there was torsion of the renal vessels causing hydronephrosis, albuminuria and the presence of tube casts in the urine. In June, 1899, J. Israel reported fourteen operations (nephrotomies) for the relief of acute suppression of urine, renal colic and hematuria, in connection with acute and chronic inflammation of the kidneys. It was never his aim to cure nephritis as such, but, as explained by him under discussion of Senator's paper on "Renal Colic, Hematuria and Nephritis," before the Verein für innere Medizin in Berlin, on Jan. 20, 1902, his intervention had for its sole object the removal of the distressing and dangerous symptoms of colic and profuse hemorrhage arising in connection with nephritis. The same position was assumed by A. Pousson in a number of articles from 1899 to 1902. He also employed nephrectomy in a number of similar cases. He says: "Personally, I have operated only when pressed by grave and well nigh extreme symptoms, much less with the aim of curing my patients than of giving them a chance in their struggle against accidental complications which had resisted medical therapeutics." In February, 1902, C. Mongour also deals with nephrotomy employed as an emergency operation in two cases of chronic nephritis, and in 1903 Rovsing advised nephrolysis for the relief of pain due to compression by perinephritic thickenings and adhesions, whether due to chronic Bright's disease or other causes.

Coming back to the question, does Edebohls' operation cure or favorably influence chronic Bright's disease, it must be answered in the affirmative. We have as proof not only the experience and opinion of two noted surgeons, Edebohls and Ferguson—the pioneers in this field—who have operated upon many cases and are as enthusiastic as ever, but also considerable evidence of others who have performed the operation. Besides the quotations of Edebohls already cited—from his latest work, "The Surgical Treatment of Bright's disease"—the following may here be added. Page 25, Dec. 21, 1901, the same author states: "That chronic Bright's disease is curable by operation is demonstrated, I believe, beyond any legitimate doubt, by the results obtained in these eight cases cured. But let it not be under-

stood, however, that I entertain any enthusiastic hopes or expectations that chronic Bright's disease will be found to yield to surgical treatment in all cases and in all stages." Page 126, May, 28, 1904: "I have decapsulated for chronic Bright's disease, up to the end of 1903, no less than ten physicians, and two others were members of immediate families of physicians, one physician and his wife, indeed, were operated upon on the same afternoon. On page 110, same date, he quotes Roswell Parks as advising decapsulation of every kidney operated upon for any reason. George Goodfellow (San Francisco, March, 1904, International Journal of Surgery), remarks: "In my opinion the operation is a perfectly justifiable one, particularly with patients in extremis." But no more conservative and at the same time more convincing argument for the operation could be adduced than the following remarks of L. L. McArthur (Chicago, page 15, Journal Am. Med. Ass., July 4, 1903): "Last year I undertook the relief of a chronic interstitial nephritis in the case of a young woman referred to me by members of this Society, Dr. Favill, of Chicago, and Dr. Norman Bridge, of Los Angeles, who for six months had the patient under treatment, and finding her but slightly benefited by the medical assistance, treatment, change of climate, etc., had recommended removal of the capsules of her kidneys, and requested me to do it. I had little confidence in any good that might arise from the operation, but agreed to it because of the reports contained in the literature. Before the operation I took pains, in addition to the examinations which they had made, to make a separate collection of the urines from both kidneys at three successive times for three successive weeks. The urine, when microscopically and chemically examined, showed the presence of Bright's disease equally affecting both kidneys. I then said that I would decorticate one kidney to see whether that kidney would be benefited as compared with the other. I did so. The quantity and quality of the urine from the operated kidney was very much increased and improved as compared with the other kidney. The patient improved physically, in fact, she was so much better that in the course of about three months she came back and urged the decortication of the capsule of the other kidney. Her condition physically was better, the edema of the

eyelids had disappeared, and the face assumed a more normal color. I removed the capsule of the opposite kidney, and its urine soon assumed as good a condition as that from the other kidney. Segregation was made in order to determine whether there was improvement or not. There is surely some value in this operation, although just what the value of it may eventually be, remains for time to tell." As early as 1890 Prof. Naunyn, the distinguished German clinician, in writing of nephrotomy for bleeding in nephritis, stated that "nephrotomy may some day play a far greater role in the treatment of Bright's disease."

Now, let us briefly analyze the arguments brought forth by those opposing this operation, and I will attempt to answer at least some of the objections.

1. It is claimed that chronic Bright's disease, even untreated, will often exhibit temporary or more or less permanent periods of improvement, and that many cases live comfortably for many years, or even get well. When we consider how superficially patients are often examined, that no microscopical or otherwise complete examination of the urine is made, then it is not surprising that many patients showing albumin in the urine, and therefore carelessly diagnosed as nephritis, but in reality suffering from gonorrhoea, cystitis, spermatorrhea, etc., will eventually get well and live for years. Consumptives often live for many years, show frequent periods of temporary or more or less prolonged improvement, and, as conclusively demonstrated, not a few recover without treatment. But would this observation,—these facts,—justify us in withholding or refusing to treat pulmonary tuberculosis? Certainly not. Cases of gonorrhoea, rheumatism, typhoid fever, etc., recover untreated, but would that mean that we should stand idly by and simply watch for complications? This argument could be continued indefinitely.

2. It has not been satisfactorily explained (proven) why and how renal decapsulation does cure or favorably influence chronic Bright's disease. This, again, is no argument whatever against the operation. It has neither been explained or proven how ascites will occasionally finally disappear, for instance, in cirrhosis of the liver, after manyappings, nor how a large pleuritic effusion will promptly become absorbed after

the withdrawal of even a small quantity only, nor how a tubercular peritonitis becomes improved or even cured after simple opening and closing of the abdomen, etc. In acute cases, where the relief of tension is probably the principal effect of decapsulation or of nephrotomy, we have an analogous condition in glaucoma. In chronic cases, where Edebohls denies the existence of increased tension, the beneficial ultimate effects are probably due to increased vascularization. The often so striking immediate effects, however, must be due to other factors. Jaboulay is inclined to attribute these to the improved nutrition of the kidney owing to vaso-motor influences, initiated by stretching and irritation during operation, of the sympathetic nerve fibers entering to the kidney with the blood vessels of the renal pedicle or root. Edebohls (Feb. 4, 1904) believes that the immediate good effects of decapsulation can be reasonably explained by the necessary manipulations, amounting in reality to a massage of the kidney during operation. The immediate stimulation of the existing natural blood supply of the kidney thus effected, supplemented by the relief to congestion afforded by the direct abstraction of more or less blood from the organ during operation, suffices for the immediate wants of the kidney and carries it along until its supplementary new circulation becomes established. Feb. 29, 1904, before Jaboulay's and Edebohls' latest theories were published—at a meeting of the Blue Earth County Medical Society, I expressed the opinion that the beneficial results following the operation were due to a stimulating and alterative effect, probably analogous to the effect of a laparotomy in tubercular peritonitis, etc. I made several observations during the convalescence of my case which seemed to corroborate this view. The incidental abstraction of blood relieves congestion and encourages an active circulation in the parts affected; the necessary manipulations also stimulate the circulation—arterial, venous and lymphatic,—and thus directly and indirectly promote absorption of infiltration products; in the same way, no doubt, the nerve supply of the kidney is stimulated, resulting in beneficial vaso-motor and trophic influences. The removal of the capsule in itself undoubtedly results in a considerable but moderate reaction (arterial hyperemization), which can only favor absorption, re-

generation and repair. To this must be added the liberation of a contracted, nodular kidney from its thickened, fibrous capsule and possible surrounding adhesions, the liberation of a large white kidney probably jammed up under the ribs, as in my case, and the suspending of a floating kidney, the seat of nephritis. When we view the possible changes in this light (in the light of stimulation and alteration) we can readily understand how the kidney is placed in a most favorable position until new connective tissue bands and adhesions between it and its surroundings have formed, through which a new and increased blood supply to the organ, if such is required, can take place. But I believe that the changes initiated by the operation—as before mentioned—are of more importance than the ultimate increase of blood supply through the new capsule and the surrounding structures.

3. To the rest in bed incident to the operation, or to the therapeutic and hygienic measures employed following the operation, is credited by some the good effects so often obtained. It need only be pointed out that many or most of these patients have been confined to bed for months and have had recourse to every therapeutic measure known to medical science—as was the case with my patient—before operation, without receiving any permanent relief, and that operation in the vast majority of cases was only resorted to as the last recourse. In further substantiation, Edebohls (page 88) remarks: "The great majority of my patients returned to their usual vocations within two months after operation. Among those who thus assumed their places in life were quite a number who had either been bedridden or invalided to the extent of being disabled for work for months, and, in a few instances, for years, prior to operation. As a rule, the ordinary restrictions of diet usually imposed upon sufferers from chronic Bright's disease were cast off by my patients after operation, and but a minority of them received any further medical treatment. I have always, however, urged upon them the desirability of placing themselves under the constant professional care and supervision of their family physician, whose co-operation with the surgeon I am convinced is necessary to secure the best results."

4. Some decry the operation because the capsule is reformed. But what objection is there to that fact when in the meantime the local condition of the kidney and the general condition of the patient has improved and continues to improve, when, according to Edebohls, the new capsule (which becomes distinctly organized in from three weeks to three months after operation) is always vascular. Anzilotte, furthermore, found as the result of his experiments,—Edebohls, page

114,—"that renal decapsulation affects neither the urine nor the general health of healthy animals; that the capsule is reconstructed in about twenty days; that the new capsule is thicker and more succulent than the original capsule; that after thirty days the new capsule is always well vascularized, with the formation of new arteries and veins; that the blood channels in the tissues around the kidney are increased in number and size, and, finally, that after 150 days, the time limit of his experimentation, there is no tendency to sclerosis in the new capsule, the vessels of which connect directly and freely with both the renal vessels and those of the surrounding tissues."

5. The high mortality shown by some operators has also been brought forth against the operation. The same applies to any operation undertaken by men not fully qualified. The results of Edebohls and Ferguson, as already mentioned, show a mortality not exceeding 10 per cent although many extreme cases which should ordinarily not be operated upon are included in their lists. With these excluded, and a more definite understanding as to the limitations of the operation, the mortality in expert hands should not exceed 5 per cent, while in the hands of those less skillful and less careful it should not exceed 10 per cent. Many of the recognized operations have a mortality exceeding this. What surgeon would refuse to operate on an early recognized carcinoma of the internal organs, although the mortality averages about 25 per cent and the results are less certain—less promising—than renal decapsulation for Bright's disease? Ferguson (*Journal Am. Med. Ass.*, April 16, 1904, page 991) remarks: "I have yet to see a case in which decapsulation and suspension (speaking of nephritis complicating prolapse) of a normal kidney did harm." Edebohls (page 299) remarks: "The operation mortality is that of the disease itself and of its complications, rather than that of the operation as such. Bilateral renal decapsulation could be performed by an expert in renal surgery upon one hundred perfectly healthy human beings without the necessity of losing a single life. The mortality of different surgeons of equal skill and experience, in operations undertaken for the cure of chronic Bright's disease, will vary according to the class of cases each may be willing to accept for operation." Probably over two hundred operations have been performed to date.

Renal decapsulation, like every other operation, has its indications, limitations and contraindications. In advising for or against operation in any given case, much will depend upon a careful consideration of the general conditions of the patient. Derangements of the heart and vascular system most frequently present problems the

solution of which will influence our advice for or against operation. Edebohls further says: "I now (1904) consider myself derelict to duty imposed by knowledge gained by experience, if at the present stage of the question, and with three conditions fulfilled, I fail to advise renal decapsulation for every sufferer from chronic Bright's disease who consults me and who has a reasonable expectation of not less than a month of life without operation. These three conditions are,—first, a positive diagnosis of chronic Bright's disease; second, the absence of absolute contraindications to any operation; third, the possibility of securing the services of a surgeon reasonably

familiar, from practical experience, with the surgery of the kidney." Under contraindications are to be mentioned extreme age, marked changes in the heart (especially dilatation) and in the blood vessels, retinitis albuminurica, marked general anasarca, edema of the glottis and lungs and Cheyne-Stokes breathing, indicating the last stage of the disease. When I was consulted by the case here reported, I was very particular to exclude retinitis albuminurica, as, from the study of Edebohls' then published cases, I regarded this condition as a clear contraindication.

(To be concluded in next issue)

HOSPITAL BULLETIN

ASBURY HOSPITAL

MINNEAPOLIS.

A CASE OF INTERSTITIAL UTERINE FIBROMA

IN THE SERVICE OF DR. J. WARREN LITTLE

Gentlemen:—I have a case of rather more than usual importance to present to you this morning. (April 21, 1905.) The patient is a colored woman, aged 45 years, with a negative personal history. She says she has gradually increased in size until she is unable to follow her occupation as cook.

She is 65 inches in height, and when she entered the hospital two weeks ago, she measured 62 inches around the abdomen, thus being almost

When she first came here, about April 7th, her abdomen was so tense that no diagnosis was possible by abdominal palpation or vaginal examination. An examination of the urine showed albumin and casts in abundance. She was then put upon a milk diet, and given saline cathartics and anarsarcin tablets. This diminished the size of her abdomen somewhat and relieved the tension so that it is now easy to make out a large tumor which fills the abdominal cavity. It feels solid, and a bimanual examination demonstrates that it springs from the uterus. It is not elastic, and for these reasons, together with the fact that it has been of slow growth, that the patient has not been ill, and that it shows no evidence of malignancy, we conclude she has a fibroid. Whether the condition of her kidneys is the result of the pressure of this growth or she is suffering from a chronic interstitial nephritis, I cannot at this time be positive, but hope that it may prove to be



a perfect illustration of the common expression, "She is as broad as she is long." Her weight is 275 pounds.

the former, for if it is not the successful removal of the growth will do no more than give her temporary relief. Her pulse has, ever since her en-

trance here, been irregular and weak. She cannot lie down, and she sleeps either in a chair by her bed or occupies a sitting position in bed.

It will not be safe to place her in a recumbent



position when the anesthetic is administered, and in spite of the condition of her kidneys, we shall give ether. The weak heart, the position in which the patient must be placed, and the length of time necessary to complete an operation of this magnitude are the reasons for giving ether rather than chloroform.

The abdominal wall is very thick and edematous, and so the incision will of necessity be almost the length of the abdomen.

The tumor is now exposed, and large gauze packs wrung out of hot normal salt solution cover the intestines above the growth, and prevent their escape from the abdominal cavity. The broad ligaments and ovarian arteries on both sides are tied and cut, no attempt being made to save the ovaries on account of the patient's age. The tumor is now liberated quite freely, and the uterine arteries controlled without difficulty.

Instead of a panhysterectomy I much prefer, in non-malignant diseases, supravaginal amputation of the cervix, for the stump acts as a support to the bladder. Stitching the stumps of the broad ligament on either side to the cervix gives additional support, preventing a prolapse, a condition very annoying and serious.

All the ligatures used in the abdomen have been chromic catgut. The closure in this case will differ from the one that I usually make, because I am afraid the union of this water-soaked abdominal wall will not unite as quickly as healthy tissue would, and I want support for a longer time; and this very pendulous abdomen also demands more than usually strong and careful adjustment. Therefore I will use chromic gut for the fascia, and the usual deep-supporting silkworm gut, through-and-through sutures and a light continuous chromic suture for the skin. I will report to you the outcome of this case later.

THREE WEEKS AFTER THE OPERATION

The tumor proved to be an interstitial uterine

fibroma, and weighed 29 pounds, and the fluid that escaped from the abdominal cavity at time of operation weighed approximately 30 pounds more, making 59 pounds in all.

The patient has done very well, and primary union has taken place throughout the entire length of the incision. A cigarette-drain was placed in the lower end of the abdominal wound to drain the fluid from the abdominal wall, and did not enter the peritoneal cavity. This gave exit to an immense amount of fluid, and I believe aided materially in securing a good union.

I want to report to you the action of kidneys following the operation: In the first 24 hours she passed 185 ounces, and since that time has passed from 40 to 60 ounces every 24 hours, but I am sorry to say that casts and albumen are still present in abundance, so that we must give an unfavorable prognosis as the patient undoubtedly has a chronic interstitial nephritis.

ST. BARNABAS HOSPITAL

MINNEAPOLIS

A NEW USE FOR A FOOT-BALL

IN THE SERVICE OF DR. C. H. HUNTER

Mrs. M., aged 39, multipara, having suffered at times for ten years with a lame back and attacks diagnosed as Dietl's crisis, and receiving no relief from the usual non-operative treatment it was decided to do a nephrorrhaphy. For a number of years it has been my custom to lay the



patient on the table over a foot-ball, thus pressing up and fixing the kidney at the highest point, where it can be readily reached.

The accompanying cut sufficiently indicates the manner of using this convenient tool, which is more serviceable than a sand-bag, Edebohl's air cylinder, or even the fist of an assistant.

CLINICAL MICROSCOPY

CONDUCTED BY GEORGE DOUGLAS HEAD, M. D.

CASTS IN URINE

In an interesting paper entitled "Cylindruria," in the Jour. of the A. M. A., January 6, 1906, Emerson gives some interesting and important findings in connection with the microscopical study of urine sediments in various forms of kidney lesions. In a case of acute congestion of the kidney he found fine granular casts. In chronic passive congestion, hyaline casts were the predominating variety with a few granular casts. Leucocytes and red-blood cells were also seen in small numbers in some cases.

Twenty-three cases of cloudy swelling were studied. All varieties of casts were observed, especially hyaline and granular. Few casts were present as a rule, although in three cases large numbers were found. In nine cases of fatty kidney only hyaline and granular casts were observed.

The author divides the one hundred and nine cases of acute nephritis studied into those admitted during the first seven days, those admitted somewhat later, and those admitted during the third week of the disease.

Of the first class there were twenty-six cases. Casts of all varieties were found, hyaline, granular, epithelial, blood, pus, and waxy. Waxy casts, however, were found in but one case. Epithelial cells, red-blood cells, and leucocytes were usually present.

In the cases of the second class (12) hyaline and granular, and occasionally epithelial casts were present.

In the cases of the third group, hyaline and granular casts were usually seen, and occasionally epithelial and blood casts.

Of the sediment studied in the cases of sub-acute nephritis or chronic parenchymatous nephritis (about thirty cases) the writer says. "The sediments are much the same as in acute nephritis, but it is more common to find coarsely granular, fatty, and waxy casts. Red-blood cells may practically always be found in especially large numbers in the acute exacerbations.

A large series of cases of chronic parenchymatous nephritis, without autopsy to confirm the diagnosis, are divided into two groups for purposes of study, those under forty years of age

(129 in number), and those over forty years (45 in number). Casts were present in enormous numbers in the former group, and were of the hyaline, granular and epithelial, fatty, waxy, pus, and blood varieties, and were out of proportion to the amount of albumin present. In the latter group the albumin was, as a rule, small in amount, but the casts were of all varieties and in large numbers.

In his consideration of the chronic interstitial type of nephritis the writer lays stress upon the presence of a small amount of albumin in a low sp. gr. urine as being especially suggestive. The casts are few, usually of the hyaline variety, and sometimes can be found only after prolonged search. During acute exacerbation of this type the urine may lose all of its characteristic appearance, and simulate an acute nephritis. In many instances it is impossible by the examination of the urine alone to come to a right conclusion as to the type of nephritis present.

The author studied one hundred and seventy-four cases of chronic diffuse nephritis with autopsy. Albumin was present in small amounts, and casts of the hyaline and granular variety, rarely fatty and epithelial, were present. In some of these cases no casts were found. The nephritis in many of these cases complicated some other disease, such as tuberculosis, malignant disease, hemophilia, etc.

This study is especially valuable because of the complete autopsy reports, which established the diagnosis of the variety of nephritis, and made it possible to compare the urinary findings with the post-mortem diagnosis. Such an opportunity is rarely afforded clinicians.

In the second place this study proves, beyond doubt, that a most confusing urinary picture may arise in a case of chronic nephritis with an acute exacerbation. Many cases of chronic nephritis do have acute exacerbations, and only by a study of the clinical aspects of the case, combined with the urinary findings, can a right conception of the type of the nephritis be arrived at. In our own experience the size of the casts is very often a true index as to whether one is dealing with an acute nephritis or an acute exacerbation of a chronic nephritis. In the former, the casts will all be of approximately the same width; in the latter, broad granular and hyaline casts will be mixed with narrow hyaline, blood, epithelial, and leucocyte casts.

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DR. C. J. RINGNELL'S RETIREMENT
FROM THE STATE BOARD OF
MEDICAL EXAMINERS

For five years Dr. C. J. Ringnell has been the secretary of the State Board of Medical Examiners, and those who have followed the work of the Board will thoroughly appreciate the value of services Dr. Ringnell has rendered the state. To the uninitiated the total result of the secretary's efforts will not be understood, but those who have kept in touch with the details and have been interested enough to see the outcome of the labors of the secretary, will join in the hearty applause that the profession have bestowed.

The Board of Examiners have been criticised for not making a better showing in the prosecution of quacks, but when the field of their operations is fully considered and the difficulties which they sought to overcome have been carefully weighed, the conclusions must be in favor of the board and its ardent and earnest secretary. The medical profession is not yet organized for concerted action, and until a working organization is

completed the Board of Examiners must fight many adversaries. The county attorney demands a full line of proof before he will take up a case against an irregular practitioner. He is more particular about this than anything else.

The State's attorney will prosecute a case in which circumstantial evidence is sufficiently interesting, but when it applies to the conduct of an irregular practitioner he feels he is prosecuting an innocent man. His reasons for the non-fulfilment of duty are sentimental rather than legal.

Another stumbling block or excuse is lack of funds with which to prosecute. The legislature is still in ignorance as to the function of this board, hence the money necessary to carry on the work is lacking. The main reason for the inability of the Board to do much, beside the examination of candidates for a state license, is the lack of interest and backing by the medical profession. When the medical man is aroused and he succeeds in convincing his representative that a part of the function of the Board is to weed quacks out of the state, and to license only those who are qualified to practice medicine in Minnesota, and thus add to the protection of the people, then will the Board fulfil its obligations.

In spite of all difficulties, Dr. Ringnell has labored faithfully, and has won the respect and admiration of the medical men in the state.

RESOLUTIONS OF THE HENNEPIN
COUNTY MEDICAL SOCIETY

The largest county society in the state has added its quota of resolutions which are in line with those adopted by other societies all over the country in support of the efforts of the Department of Pharmacology of the A. M. A. The resolutions unqualifiedly endorse the department in its crusade against patent and proprietary articles that are harmful and dangerous to the public. It also supports the aims of the department to expose the formulæ of all secret remedies, and give a true analysis of the various products which are in common use. Many surprises have been announced, and doubtless many will follow in the publications of the department.

The result of the movement is already noticeable in many of the state medical journals, and if one will glance over the pages of the NORTH-

WESTERN LANCET of two months ago and compare it with the issues of the JOURNAL-LANCET of this year, many old proprietary acquaintances will be missed. There is still much to be done, but it can only be thoroughly accomplished by the assistance and support of the members of the county and state organizations. Advertising spaces must be filled in order to pay the running expenses of publication, and a word of encouragement from the physicians will bring advertisers to our support.

Another resolution was unanimously adopted by the Society for the encouragement of ethical and scientific pharmacy. So-called "patent medicines," particularly those exploited in the public press, which are composed of unknown and harmful ingredients, are expressly condemned.

It was further resolved, "That the members of the Hennepin County Medical Society hereby agree that it shall be their policy to favor druggists who do not lend their aid to firms advertising patent medicines by offensive methods."

This is a step in the right direction, and will undoubtedly meet the approval of the better class of druggists. A still better plan would be devised by a joint meeting of the druggists and a committee of the society, or an open session in which both might openly consider how to improve the situation.

The solution of these vexing problems will be worked out in time, but no time should be lost in bringing the subject up for discussion. The passage of a resolution, unless followed by early action, is like an acute disease, soon over and forgotten.

If the members of the Hennepin County Society mean what they say in their resolutions they must fulfil them to the letter, rather than let the spirit of them evaporate.

THE CORONER—IS HE A NECESSITY?

Attorney-general E. T. Young, of Minnesota, has handed down a decision in which the duties of the coroner have been clearly defined. The opinion is given in reply to a query from W. C. Leary, assistant county attorney for Hennepin. He asks two questions: First, "Are the fees of a physician, employed by the coroner of Hennepin county in the conduct of post-mortem examina-

tions, a proper charge against the county?" The answer is in the affirmative, the fee is a legal charge against the county, and is not paid out of the salary of the coroner. The physician can be called for such purpose only where an inquest is held. The attorney-general further states that "it is plain that the professional examination by a physician, contemplated by law, could not be made by the coroner; he could not be both court and witness in conducting an inquest."

The second question, "When is the coroner justified in directing that a post-mortem examination be made?" is answered thus: "The county coroner is a special magistrate, having power to investigate deaths which occur from other than natural causes." "He shall take inquest upon view of the dead body of such persons only as are supposed to have come to their death by violence, and not when the death is believed to have been, and evidently was occasioned by a casualty." It is evident that in such an inquest it will often become important to have the opinion of a competent physician as to the cause of death, and in order to give such an opinion the physician must make a professional examination of the body, which may be entirely external, or it may include an examination in the nature of an autopsy."

The opinion further states that the law does not require a coroner to be a physician; but if he be a physician, when conducting an inquest he is acting in a judicial, and not a professional capacity.

This opinion probably applies to counties where the coroner is on a salary and not dependent on fees. In small counties the ruling of the attorney-general might work a hardship in some instances, particularly when the coroner is called upon three or four times a year. It is evident that although the coroner, after consultation with the county attorney, may decide an inquest is necessary, and also has power, if his investigation shows that some individual is probably guilty of death, to cause such person to be apprehended and taken before the proper court for examination or trial that the work of the coroner could be assumed by the county attorney.

The investigations by the coroner are wholly legal inquiries, and a physician, other than the coroner, must make a professional examination

of the body. It is, and has been for years, a much discussed subject, and in some eastern cities a determined stand has been taken for the abolition of the coroner.

The office is an elective one, and is rather more remunerative than the earnings of many physicians, hence the effort to keep the physician in the office of coroner. The investigations and duties of the coroner can be carried on as well by a lawyer as by a physician, but a long established custom will probably keep the physician seeking the office. In small towns in the country the office is frequently occupied by non-medical men, and when an inquest is required a physician is called upon for a professional opinion.

FEEES FOR TELEPHONE CALLS

The average physician is consulted over the telephone many times in the twenty-four hours. To discourage the habit of patients who want advice for anything at any time, a charge should be made. The time spent in discussing a case and its treatment, should be taken into consideration, and a suitable charge made therefor.

In many of the large cities the physicians are making note of their telephone consultations, and the usual office charge fee is entered upon the books. In Prussia the medical chambers are discussing the general adoption of a telephone consultation fee. The Pomeranian chambers have already made it a rule, and doubtless the practice will extend to this country.

In the country along the rural telephone routes there are many calls for advice, and doubtless the practitioner forgets too often that his telephone services frequently save the farmer a long wait or drive. The doctor may be relieved to know his trip is postponed, but he should not neglect to enter it upon his books as service rendered.

At first, the charge may be resented or repudiated, but the patient will soon learn to appreciate the value of advice at an opportune moment. If all the telephone messages that come to the physician were tabulated the result would be surprising. If all the moments spent at the telephone giving medical advice were strictly accounted for the value of the service would be equally astounding. The time consumed by use-

less telephone messages, social visits, and wholly unnecessary calls is equal to the time consumed in reading a chapter in a good book.

The subject is a good one for consideration, both thoughtful and financial.

MISCELLANY

WHAT A COUNTY SOCIETY CAN DO

The following letter from one of the leading surgeons of Indiana contains so much of interest to county societies, indicating what may be done in any section where as many as three or four wide-awake men can be gotten together, that we are glad to put it before the profession. "What one man has done, other men can do."

Valparaiso, Ind., Dec. 21, 1905.

Dr. J. N. McCormack,

Chairman Committee on Organization,
Bowling Green, Ky.

Dear Doctor:

Your letter asking me to elaborate our plan of post-graduate work here, with the view that such an account may be used in inducing other medical societies to do likewise, has been received.

I am greatly pleased to have the privilege to do this, not only for your personal gratification, but for the reason that I am confident that it will redound to the very great benefit of such societies as deem it wise to adopt our plan, as well as to the individual members. It will enable them to do better and more efficient work for the public as a whole, and to aid each individual physician in rendering the best possible service to the unfortunate sick.

Our work was begun two years ago by getting every physician interested in becoming more familiar with scientific and practical knowledge which would be an advantage to him at the bedside, and which would broaden him as a physician. With this end in view, we rented a room, formed a club, and endeavored in every way to appeal to and build up the social, scientific, and material spirit and welfare of the profession. I desire to report that we have been eminently successful from every point of view.

In carrying out this plan we divided our work in such a way that each physician was required to

act as a teacher of some special subject, and all the others took their places as students once more. Anatomy and surgery was assigned to one; physiology and practice to another, and so on through the list of subjects, one fundamental and one practical branch to each teacher. Our meetings were held twice a week, regular lessons were assigned, and we were expected to be present and give one hour's time to the recitation and study of such subjects as were assigned to that evening. In this way we were not only enabled to exchange individual views as to what we believed, but we could always have some good medical authority to place us right if it was found that we were wrong. This plan proved very desirable, and we soon learned that the teacher of the topic derived the greater benefit from this course, for the reason that he was required to study more to hold his ground, often against the combined opinion of his class.

After going along in this way for a time it became apparent that our faculty should be changed from time to time, in order that the teachers might become proficient in more than one subject. I desire to report to you that we found this most satisfactory, and that it has resulted in a marked improvement in the attainments of every member of our profession, which means, of course, the profession as a whole.

The social feature of our plan has done as much, if not more, for the good of the profession, as the scientific work. I am now able to say that we have no one in this county not on the most friendly terms with all others, and that such condition is because every body actually desires to be friendly.

In addition, we have kept up our regular society meetings, always with increased interest, and although ours is not one of the large counties, I feel safe in saying that we have one of the best, if not the best, society in the state of Indiana, and we are resolved to go on and make it still better.

In connection with this work it did not take us long to determine that, in consideration of the increase in the cost of living in recent years, we were not being adequately paid for our services, and we concluded that it was only just that the scale of fees should be increased one-half. In order that this might be uniform we all signed the schedule, definitely fixing the price of ser-

vices for both day and night, and had this published. It went into effect without a single ripple, and has been strictly maintained. I have never heard a complaint on the part of the public, or of the agreement being violated by any member. In fact, the public seem to understand the necessity for the change, largely for the reason that it knew we were making an heroic effort to give the people better service. The results have been that our incomes have been increased by one-half, and that night work has been reduced to a minimum, giving us the evenings for post-graduate work, and to spend with our families. While we have not accomplished all that we set out to do, we have certainly made rapid progress, and are not to stop or falter until our ideals are attained.

Probably this very crude plan might be greatly elaborated and improved, but it has worked so well, and given such universal satisfaction here, that I am sure none of us would be willing to disturb our present satisfactory condition.

Should you be able to use what we have done as an incentive for others, or to elaborate it for the promotion of medical organization, you will have the very best wishes of every member of our profession in doing so. With personal best wishes,

I am, most sincerely yours,

DAVID J. LORING, M. D.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular meeting of the Academy was held at the West Hotel, Minneapolis, Wednesday, January 3, 1906. Dinner was served at 7 o'clock. The session was called to order at 8:20. Owing to the severe snowstorm prevailing there were but eighteen members present. The president being absent, the vice-president, Dr. R. O. Beard, presided.

Dr. A. A. Law, of Minneapolis, reported an operation for gall-stone disease in which 180 stones were removed. The man had had an exploratory operation seven years before by another surgeon, at which time there were no stones present. There was no bile found in the gall-bladder,

and none flowed during the healing of the wound. The patient made a good recovery.

Dr. C. M. Carlaw, of Minneapolis, read a paper entitled, "Traumatism as an Etiological Factor in Acute Leukemia, with Report of Case." Dr. J. Frank Corbett, of Minneapolis, by special invitation from the Academy, presented the pathological findings in Dr. Carlaw's case, showing microscopic slides and drawings of the blood pictures.

Dr. W. D. Sheldon, of Minneapolis, presented his inaugural thesis, entitled "A Discussion of the Physical Findings in Two Cases of Pleurisy with Effusion." The subject was illustrated with a number of large charts showing in colors the varying physical findings at different dates.

ARTHUR W. DUNNING, Secretary.

HENNEPIN COUNTY MEDICAL SOCIETY

The annual meeting of the Hennepin County Medical Society was held in the library, Dr. David Owen Thomas, president, in the chair, and sixty others present.

The Executive Committee reported, recommending for adoption the resolution presented by Dr. C. H. Bradley at the December meeting, as follows:

Resolved, That the Hennepin County Medical Society expresses its hearty approval of the action of the American Medical Association in establishing a Council of Pharmacy and Chemistry to investigate non-official drugs and medicinal preparations. The number of such preparations is now so great that individual investigation is impossible.

We further wish to express our confidence in the Council and our belief that their work will result in great good, both to the public and to the physician.

We also firmly support our Journal of the American Medical Association in its campaign of education, the purpose of which is to inform the physician in regard to secret nostrums and medicinal preparations.

A copy of this resolution shall be forwarded to the secretary of the A. M. A.

This resolution was adopted by vote.

Applications for membership were received from Dr. Geo. K. Hagaman, of Anoka, graduate

of U. of M., 1903; of Dr. Henrik Nissen, 523 First avenue south, University of Kristiana, 1888, by transfer from Albert Lea, and of Dr. A. H. Van Cleve, 303 Central avenue, Col. of P. & S., New York, 1880, by transfer from the Stearns-Benton County Society.

Amendments to the constitution were adopted as follows, notice of the same having been given at the December meeting:

ARTICLE V—OFFICERS

SEC. I.—*Names and Number*

The officers of the Society shall be a president, a vice-president, a secretary-treasurer, a librarian, a board of six censors, a board of six trustees, and an executive committee consisting of six active members and the president, the secretary-treasurer and the librarian, *ex-officio*.

SEC. II.—*Election and Term of Office*

The president and vice-president shall be elected at the annual meeting by written ballot, and the term of office shall be one year.

The secretary-treasurer and librarian shall be elected at the annual meeting by written ballot, and the term of office shall be three years.

The trustees, censors and elective members of the executive committee shall be elected by written ballot at the annual meeting, and their term of office shall be three years, but the terms of only two members of each body shall expire in any one year. For the year 1906 there shall be elected two censors, two trustees and two members of the executive committee for a term of two years; two censors, two trustees and two members of the executive committee for a term of two years; two censors, two trustees and two members of the executive committee for a term of one year. Thereafter vacancies shall be filled as they occur. Anything in the constitution or by-laws in conflict with the above is hereby repealed.

The secretary-treasurer made his annual report, which was adopted by the Society.

A vote of thanks was given to Dr. G. G. Eitel for his generous donation of \$50.

The president then delivered the annual address.

The secretary-treasurer called attention to the fact that members whose dues are unpaid for one year stand suspended, and are not entitled to receive the JOURNAL-LANCET.

The Society then proceeded to elect officers for 1906, and after written ballot the following were declared elected:

The president-elect, having been escorted to the chair, spoke briefly to the Society, which then adjourned.

F. A. KNIGHTS, M. D., Secretary.

President, Dr. Frank C. Todd; vice-president, Dr. J. A. Crosby; secretary-treasurer, Dr. C. H. Bradley; librarian, Dr. Chas. N. Spratt; trustees, three years, Dr. H. H. Kimball, Dr. W. A. Hall; two years, Dr. G. G. Eitel, Dr. R. J. Hill; one year, Dr. G. D. Head, Dr. F. A. Knights. Censors—Dr. R. J. Hill, Dr. L. A. Nippert, Dr. C. G. Weston, Dr. A. E. Benjamin, Dr. E. S. Geist, Dr. J. F. Corbett. Executive Committee—Dr. J. W. Bell, Dr. E. S. Strout, Dr. R. E. Farr, Dr. J. C. Litzenberg, Dr. Wm. R. Murray, Dr. F. A. Knights. Delegates to Minnesota State Medical Association—Dr. O. E. Linjer, Dr. C. G. Weston, Dr. C. H. Hunter, Dr. Geo. C. Barton, Dr. J. H. Stuart, alternates, Dr. A. J. Murdock, Dr. A. T. Mann, Dr. L. M. Crafts, Dr. E. H. Beckman, Dr. S. P. Rees.

OLMSTED COUNTY MEDICAL SOCIETY

At the last meeting of the Olmsted County Medical Society, held at Rochester, Jan. 5th, the following officers were elected for the ensuing year: President, Dr. Charles T. Granger; vice-president, Dr. George Stevens; secretary, Dr. John E. Crewe.

It was voted to hold a meeting every month hereafter, and that a diagnostic clinic be held at St. Mary's and the Rochester State Hospital several times during the year.

GEORGE STEVENS, M. D., Secretary.

WINONA COUNTY MEDICAL SOCIETY

The annual meeting of the Winona County Medical Society was held at the office of Dr. Stewart, in Winona, on January 2d, vice-president H. F. McGaughey being in the chair, and thirteen members present.

Dr. W. H. Neumann, of Lewiston, Minn., Northwestern University, 1904, was elected to membership.

Dr. E. M. McLaughlin read a paper entitled

"Typhoid Fever," which was a comprehensive review of the history of the disease and the modern methods of diagnosis and treatment.

Dr. A. O. Bjelland, of Mankato, Councilor of the Eighth District, was present and delivered an address upon the organization and methods of conducting county societies. He recommended more frequent meetings and the appointment of a committee of three upon legislation.

The following officers were elected for the ensuing year:

President, Dr. H. F. McGaughey; vice-president, Dr. W. F. C. Heise; secretary, Dr. J. B. McGaughey; treasurer, Dr. L. H. Munger; member of the Board of Censors, Dr. D. B. Pritchard.

The society adopted the suggestion of Dr. Bjelland, in the matter of appointing a legislative committee. Drs. Tweedy, Keyes, and Scott were named as such committee.

The election of a delegate and alternate to the meeting of the State Medical Association was postponed until the April meeting.

J. B. MCGAUGHEY, M. D., Secretary.

NEWS ITEMS

It is reported that Dr. Frank Brigham, of St. Cloud, will locate at Cass Lake.

Dr. O. M. Justice, of Elysian, committed suicide in California last month.

Dr. J. C. Suter, of Crystal, N. D., is doing post-graduate work in New York City.

Dr. John J. Buckley, of Missoula, Mont., was married last month to Mrs. Clara B. Rich, of Butte.

Dr. C. F. Warn, who has been practicing for some years at 39 Washington Av. So., Minneapolis, has moved to Mentor.

Dr. E. T. Sanderson, a recent Chicago graduate, will locate in Minneota, and become the partner of his father, Dr. S. E. Sanderson.

Dr. E. B. Dougherty, State University, '04, has moved from Eveleth to Sparta, where he goes to take charge of Dr. Moore's mining practice.

Drs. Geo. R. Curran, J. M. Edwards, C. J. Holman and A. F. Schmitt, of Mankato, have formed a partnership. Their work will be specialized.

H. P. A. Carstens, of St. Paul, has been held to the grand jury on a charge of practicing medicine without a license. Dr. Ohage, the health officer, is prosecuting the case.

Dr. A. G. Allen, of Deadwood, S. D., has been appointed a member of the South Dakota State Board of Medical Examiners, to take the place of Dr. J. W. Freeman, of Lead, S. D.

Dr. Karl O. Bendeke, of Minneapolis, died last week at the age of 65. He graduated from Rush in 1870, and came to Rushford, Minn., the same year, and from Rushford to Minneapolis in 1877.

Dr. T. H. Bly, of Minneapolis, has been convicted upon a charge of criminal abortion, which caused the death of the victim. He is under sentence of three and a half years in the penitentiary.

The Blue Earth County Medical Society has changed the hours formerly established for night visits. The fee of \$2.50 remains the same, but the hours are now from 9 p. m. to 7 a. m. instead of from 8 p. m. to 7 a. m.

A local paper in a neighboring state says that a certain surgeon of that state who expected to locate in Minneapolis the first of the current year will not do so because of the "limited hospital facilities in Minneapolis."

At the annual meeting of the Morrison County Medical Society, held in December, at Little Falls, the following officers were elected: President, Dr. G. M. A. Fortier; vice-president, Dr. N. Dumont; secretary and treasurer, Dr. E. E. Hall.

The Cass County Medical Society, of North Dakota, held its annual meeting in Fargo, N. D., last month. The following officers were elected for 1906: President, Dr. C. N. Callander; vice-president, Dr. Carl Henning; secretary, Dr. Brown; treasurer, Dr. F. H. Bailey.

The Fargo (N. D.) Forum says that Marvin E. Cox, who left Fargo under a shadow and in the night time, has turned up at Seattle at the head of the Puget Sound Sanatorium, which is to cost \$200,000. Mr. Cox got M. D. after his name in his flight across the country.

The Southeastern District Medical Society, of South Dakota, met in Yankton last month, with a good attendance. The annual election resulted as follows: President, Dr. L. C. Mead, Yankton; vice-president, Dr. F. A. Sweezy, Wakonda; secretary and treasurer, Dr. J. L. Stewart, Irene.

St. Raphael's Hospital, of St. Cloud, calls attention to the fact that hotels are protected by a state

law against the non-payment of bills by temporary boarders, while hospitals suffer from those who claim to be able to pay for care and treatment, and then refuse when they leave the hospital.

The annual meeting of the Winona County Medical Society was held the second of January at Winona. The following were elected officers for the current year: President, Dr. H. F. McGaughey; vice-president, Dr. W. F. C. Heise; secretary, Dr. J. B. McGaughey; treasurer, Dr. L. H. Munger.

The Goodhue County Medical Society met in annual session, in Red Wing, on Jan. 2d. The attendance was large, and the papers excellent. The following are the officers for the current year: President, Dr. Edward Backe, Kenyon; vice-president, Dr. G. C. Wellner, Red Wing; secretary, Dr. J. V. Anderson, Red Wing.

The Governor appointed two new members of the State Board of Health, and reappointed one, as follows: Dr. W. A. Jones, of Minneapolis; Dr. A. J. Gilkerson, of Osakis; and Dr. Charles W. More, of Eveleth, reappointed. The retiring members are Dr. Edward Shumpik, of Minneapolis, and Dr. Malcom McKinnon, of Fosston.

The Watertown (S. D.) District Medical Society met at Watertown, S. D., in December, and after listening to the program, banqueted at the Arcade Hotel. The officers elected for the current year are as follows: President, Dr. H. M. Finnerud, Watertown; vice-president, Dr. H. H. Clark, Watertown; secretary and treasurer, Dr. J. B. Vaughn, Castlewood.

The supreme court of Minnesota has finally passed upon the constitutionality of the medical practice act, and found it constitutional. The case went to the supreme court from Duluth on appeal by O. A. Oredsen. The court holds that the offence is committed when any person without a license, prescribes, for a fee, any drug, medicine, or other agency for the treatment of disease.

Governor Johnson has appointed three members on the State Board of Medical Examiners to take the places of three retiring members, Dr. C. J. Ringnell, the secretary, of Minneapolis; Dr. W. A. Beach, of Mankato, and Dr. O. E. Giere, of Madison. The new members are Dr. Oswald Leicht, of Winona; Dr. P. A. Hilbert, of Melrose; and Dr. W. S. Fullerton, of St. Paul. The homeopaths are claiming that one of the new appointments should have been, according to law, of their school. The annual meeting of the Board occurs in April, when new officers will be elected.

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No. 3

VENESECTION, THEN AND NOW*

By C. F. WARREN, M. D.

MANKATO, MINN.

When requested to present a paper to be read by myself and discussed by so able men as compose this association, and I selected "Venesection, Then and Now," I well knew that I should address but few who had been in practice when venesection was largely resorted to, in order to aid in the restoration to health of many who were afflicted with various acute and chronic diseases. On the other hand, I well knew that the majority of medical men of today have never practiced venesection, and that a few have never received any instruction as to the proper technic of the operation of phlebotomy.

That the composition of the blood is the same as it was thousands of years ago, except for the contaminations caused by syphilis, measles, scarlatina, diphtheria, la grippe, tuberculosis, and many other diseases too numerous to mention, I believe to be true. That the abstraction of blood to aid in the relief of certain conditions is as good today as it was hundreds of years ago, and should be engaged in by the profession, observing certain restrictions, I believe to be equally true. In support of the above assertions, I desire to offer, verbatim, the opinion of Dr. George B. Wood, author of a treatise on "Therapeutics and Charmacology, or Materia Medica," published in 1860 (second edition). Coming from one who at that time was president of the American Phil-

osophical Society, president of the College of Physicians of Philadelphia, emeritus professor of the Theory and Practice of Medicine in the University of Pennsylvania, and one of the authors of the U. S. Dispensatory, etc., it should command profound respect.

He says, referring to blood-letting:

"There is no remedy more important than this; perhaps none which so frequently saves life. That it is susceptible to abuse, and often has been abused, there can be no doubt; but this is only an argument in favor of a careful study of the powers for good and evil, and of great watchfulness in its use."

"The practitioners who reject it, and oppose their own prejudices or fears against the experience of all ages not only deprive themselves of a most important agent for good, but assume a responsibility which might well make a conscientious individual shudder, and though never one of those who might be considered as special advocates of the lancet, I fear that, in the reaction from a too indiscriminate and reckless use of it, the profession is now in danger of erring in an opposite direction, and I cannot but think that the general tendency is rather to an injurious neglect than to an injudicious use of the remedy."

He further says: "In my experience as an hospital physician, I have seen many patients past all hope of cure, whom early and judicious

*Read before the Minnesota Valley Medical Society, at Mankato, December 2, 1905.

bleeding would probably have saved, but very seldom those in whom I had reason to think that an abuse of the remedy has been productive of serious injury."

When we contemplate the high estimation, in ages gone by, in which venesection was held, and also how many valuable lives were saved by its use, we are amazed to know that many, even professors and good practitioners, of late years have paid little attention to so valuable a remedy. As late as 1852 the indefatigable Charles D. Meigs, who at that time was professor of Diseases of Women and Children in the Jefferson Medical College of Philadelphia, and was the author of a "Treatise on Obstetrics," says, when discoursing upon puerperal convulsions: "If there be a case of disease in which bold and daring employment of the lancet is demanded, it is the case of the puerperal convulsion." He further says: "It is scarcely worth while to open a vessel to draw off eight or twelve ounces of blood. The patient ought to lose from thirty to sixty ounces at one venesection, if possible, and, if signs of faintness appear, they should be hailed as the harbinger of success. But this bleeding must be promptly begun and rapidly executed."

In my early days of practice, when called to witness my first case of puerperal convulsion, the words of Professor Meigs resounded in my ears. I acted promptly, and the result was satisfactory. During my period of practice, I have seen many cases, and if early venesection was resorted to, the result has usually been favorable. By venesection the pressure of the blood in the circulation in the brain is relieved, and if there is a puerperal albuminuria, the pressure within the kidney is lessened and thereby relieved. My observation has convinced me that if venesection could have been resorted to at an early date in many attacks of pneumonia or pleurisy, and pleuropneumonia, we should have had fewer cases of hydrothorax or empyema.

The menstrual life of a woman is many times fraught with unpleasant manifestations, especially at the menopause. The average duration of menstrual life is conceded to be about thirty-five years; consequently, there are four hundred and twenty transactions attended with the elimination of certain materials from the blood, except in case of those whose periods are stopped by

pregnancy or who are physically impaired so as to suffer with amenorrhœa on account of anemia. In plethoric cases the sudden cessation of menstruation at the menopause is often attended with an intoxication dependent upon a retention of certain materials in the blood, which each month escapes by the process of menstruation. In such cases the physician is many times confronted by one who exclaims: "I cannot bear with such sudden sensations of heat; with waves of blood rushing up to the face; with giddiness and suffocation." Others complain of shooting neuralgia pains, headaches, fullness of the vessels of the head and neck, palpitation, and irritable tempers, and some show disturbed mental balance. In plethoric cases relief was had by venesection ages ago, and venesection today is as proper as then; and in the majority of cases the results will be very satisfactory to both the patient and the doctor. Many times venesection will relieve all unpleasant manifestations, but other cases may require a moderate bleeding each month for three or four months.

I might continue to present conditions by the hundreds where venesection is of unmistakable benefit, but I will not take more of the valuable time allotted to this meeting except to quote the remarks of Dr. Osler, in his work on the "Practice of Medicine," when he says, under the head of "Valvular Lesions": "For the relief of the embarrassed circulation in cases of dilatation, from whatever cause, whether in mitral or aortic lesions, or distention of the right ventricle in emphysema, when signs of venous engorgement are marked and when there is orthopnea with cyanosis, the abstraction of from twenty to thirty ounces of blood is indicated. This is the occasion in which timely venesection may save the patient's life—it is a condition in which I have had most satisfactory results from blood-letting."

It is evident Dr. Osler thinks venesection is as good now as then.

The history of a discharge from an ear appearing a few days to a few weeks after the beginning of a slowly developing deafness in that ear, unaccompanied at any time by pain, is suspicious of tuberculous otitis media.—American Journal of Surgery.

SYSTEMIC EFFECTS OF CARDIAC INSUFFICIENCY*

By J. S. HOLBROOK, M. D.

MANKATO, MINN.

The systemic effects of valvular insufficiency are those of chronic congestion. Let us review the circulation of the blood. Briefly, the blood is carried by the expulsive effort of the heart from the left ventricle through the aorta to the general arterial circulation into the capillaries in the various parts of the body, thence into the veins, and back to the right auricle. From here it flows into the right ventricle to be forced into the lungs for oxidization, thence on to the left auricle, and completes the circuit by descending again into the left ventricle. The failure of the heart to carry on this circulation with the usual force results in the condition known as *cardiac insufficiency*.

It will be readily seen that a bad leakage of the mitral valve will cause a distention of the left auricle. This in turn causes a backward pressure and consequent dilatation of the capillaries of the lungs. The engorgement of the lungs brings about a dilatation of the right ventricle and auricle, and the damming up causes an imperfect drainage of all the organs of the body.

Thus we see that the pathological conditions are a direct result of mechanical obstruction, and a consequent congestion of the venous system and anemia of the arterial system. As the direct result of the congestion we get general edema. In general, edema is due to a disturbance of the relation between the amount of fluid which transudes from the capillaries, and that which is absorbed and carried away by the lymphatics. In case of cardiac insufficiency the dilated capillaries allow more fluid to escape than can be removed, and the excess of fluid accumulates in the connective tissue spaces and the lymph radicles. In the lungs the pathological conditions are

1. An increase in size of the capillaries in the walls of the air spaces. They are dilated and become tortuous, and of course project into the air spaces.

2. There is consequent thickening of the walls of the air spaces, due to the distended capillaries.

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a growth of red muscle, and connective tissue.

3. Small black or brown granules may be deposited in the walls of the vesicles or connective tissue, and we get a condition known as *brown induration*.

4. We may find another pathological condition in which there is a formation of new cells within the air vesicles, whose walls become covered with a layer of nucleated epithelium, or the air space may be filled with swollen cells, giving us the red hepatization.

Thus in cardiac insufficiency we have a congestion of the lungs accompanied by frequent bronchitis, dyspnea, and cough. The symptoms increase in severity, and there is abundant frothy, watery expectoration, which may be blood stained. There is little or no fever. Physical examination shows impaired resonance and fine râles over the lower part of the lungs.

We also get an accumulation of fluid in the pleural cavities as a part of the general dropsy.

The damming up of blood in the lungs causes backward pressure through pulmonary arteries, and causes dilatation of the right ventricle. This in turn fails to receive blood from the right auricle with freedom, and if enlargement of the ventricle is great we get tricuspid leakage, because the valves do not fully close the auriculoventricular opening. Hence, with each heart beat there comes a backward wave, and we get a pulsation in external jugular veins.

The same sluggish circulation causes dilatation of the capillaries of the upper extremities and head, and we get cyanosis, the blue or purplish tint of the skin being due to the capillaries being distended with imperfectly oxygenated blood. This is best shown where the epithelium is thin, as in the finger tips, lips, and mucous membranes. Long-continued peripheral congestion results in clubbed fingers, with nails curved both longitudinally and laterally. Following down the vena cava we find the renal veins distended, the kidneys sharing in the general venous congestion. Changes here are quite similar to those in

the lungs. The glomeruli show a dilatation of the capillaries with more or less thickening of the walls and swelling of the cells that cover them. There is also an increase in the connective tissue. The arteries remain normal. From the chronic congestion diminished secretion results, and later on we find much albumin and many casts in the urine.

Through obstruction to the flow through the portal veins we get disturbances in the liver, stomach, spleen, and intestines.

The liver may be very large, and if the tricuspid valve leaks we get a pulsating liver. The pathological change is found in the center of each acinus which is congested, while the periphery is lighter colored, giving the nutmeg appearance. As in the lung we find the deposit of granules of black pigment in the cells. After long-continued dilatation of the portal veins, the hepatic cells become atrophied.

As the stomach and intestines have their blood drained by the portal veins, congestion of the liver causes congestion of these organs; and we get chronic gastritis, giving headache, vertigo, disturbed sleep, depression of spirits, drowsiness, and a feeling of danger. After eating there is

epigastric oppression, fullness, and distress, burning pains, and tenderness. There are frequent eructations of bitter fluid and belching of gas. The intestines are also the seat of chronic catarrh which results in diarrhea, which is hard to control. This, however, may alternate with constipation. In the latter stages there may be a serous exudate into the closed cavities, and we get hydrothorax and ascites. The spleen is also enlarged. In the legs, early in the disease, we get edema, which is noticed after the patient has been on his feet for several hours. This entirely disappears after a night in bed, but as the disease progresses the edema gradually extends up the legs, and affects the abdomen and other parts of the body, as already stated.

Continuing to the arterial side we find a small amount of blood in the vessels. The anemic condition causes dizziness, fainting, and often syncope.

Details as to symptoms have been purposely omitted in this paper, and only the condition of the different organs mentioned. The chart will help fix in mind this one thing, that the systemic effects of cardiac insufficiency are a direct and natural result of damming up of the circulation.

ANEMIAS AND A SATISFACTORY SEPTUM OPERATION

BY ROBERT A. CAMPBELL, M. D.

MINNEAPOLIS

Every general practitioner is interested in this subject because of the practical bearing it has upon his work.

Deflected septa cause nasal obstructions, and nasal obstructions cause anemias.

Kyle says, in reference to a series of blood counts made in these cases (*Diseases of the Nose and Throat*, page 52), "In every case (of nasal obstruction) before removal the red-blood corpuscles (the oxygen carriers) were reduced to 3,000,000, in some instances as low as 1,500,000, with the hemoglobin reduced to 50 or 60 per cent of normal, and in many cases with slight increase of white corpuscles. After removal of the obstruction, both hemoglobin and corpuscles grad-

ually increased to the normal."

It is necessary, then, for the cure of anemias dependent upon insufficient oxygen ingestion, due to nasal obstructions caused by deflected septa, to have a satisfactory operation for straightening the septum.

I am happy to say that there is at last such an operation. It has been practiced long enough by such men as Killian and Hajek and Freer to demonstrate that it is perfectly satisfactory in every way, and applicable to any part of the septum. It is the "submucous resection of the deflected portion of the nasal septum."

My first operation was entirely successful, but required one hour and ten minutes; subsequent

ones have reduced the time from twenty to forty minutes.

The operation is a source of delight to the nasal surgeon because it exercises his utmost skill.

To briefly describe the operation, let us consider the septum as composed of two outside flexible layers and one middle stiff layer. A vertical incision is made in one of the flexible layers (the mucoperichondrium) near the front of the nose, and through it this layer is separated entirely off the stiff layer (the cartilage) over the area of deflection, and a little above and below and behind it. Then the vertical incision is carried entirely through the stiff layer (cartilage) down to, but not through, the flexible layer on the other side, and that flexible layer is raised off the cartilage over its deflected area. Then the cartilage, to the extent of its deflection, is taken out through the opening of the vertical incision. This allows the two flexible layers of mucoperichondrium to fall like curtains into their proper position, dividing the nose into two equal cavi-

ties. They are held in apposition by packing for a few days. The cartilage is gradually renewed from the perichondrium. There results absolutely no deformity. Union of the two layers of mucoperichondrium is soon completed. There is very little after-treatment, and patients from out of the city can go home in from five to fourteen days, about five times earlier than after the old barbarous Asch operation.

Killian says of the operation: "We attain in the most elegant way and in the shortest time what was earlier, after a long endeavor, often only unsatisfactorily accomplished. I have never had more enjoyment from any other small rhinologic operation than from the described septum operation, and I can most enthusiastically recommend it."

See Freer's article in the *Journal of A. M. A.*, Dec. 5, 1903, White's "Resection of the Nasal Septum," *Boston M. & S. Journal*, April, 1904, and Killian's "The Submucous Window Resection of the Nasal Septum" in the *Annals of Rhinology*, June, 1905.

A CASE OF RENAL DECAPSULATION FOR CHRONIC BRIGHT'S DISEASE*

By L. F. SCHMAUSS, M. D.

MANKATO, MINN.

PART II

THE CASE REPORTED

Miss M. R., of Iowa, single, age 27, occupation housework.

Family History.—Negative.

Personal History.—(May 5, 1903.) Patient was six years old when her mother died suddenly while pregnant; cause of death unknown. From that time on until she began ailing, patient always had to work very hard. She enjoyed excellent health, however, never knew of a sick day until about eight years ago, when she was not quite 19 years old. Then gradually her health and strength began to fail, troubled considerably with stomach, marked weakness, always tired,

slight dizziness, etc. Her condition progressively grew worse as the years passed. Four years ago she went through a course of typhoid fever. A year ago last month—in April, 1902—she consulted a physician on account of swelling of limbs and her poor condition in general. Diagnosis of Bright's disease was then made, and patient put upon an exclusive milk diet for six to eight weeks, together with medicines and bathing; no particular change or benefit from treatment; swelling of limbs would disappear while lying down and return when on her feet. In the course of several months ascites also developed. Consulted Rev. "Dr." Kroeger, Epiphany, S. D., in June, 1902; took his medicine and followed his advice (unrestricted diet, etc.) for some time,

*Read before the Minnesota State Medical Association, June 1, 1905.

but finding herself becoming progressively worse, she again fell back to the milk diet, hot packs and some patent medicines, but without relief. Her condition becoming gradually more aggravated and hopeless. In January, 1903, patient was taken by her physician to one of the best hospitals in this country, with the idea of having her kidneys decapsulated, but operation was refused. Patient had been on restricted diet for many months, and therefore her kidneys were not prepared for the extra work thrown upon them through the liberal diet allowed while in the hospital. The reaction was soon (within a week) manifested by the development of marked uremic symptoms (severe headache, pain in back and limbs, marked ascites and general anasarca, dyspnea, marble color, etc.), so that she was not expected to survive. However, the close attention of her physician and a special nurse, free sweating, etc., brought her through the attack. I was consulted about her by her brother February 3, 1903. Examination of urine showed an advanced case of parenchymatous nephritis. The measures advised (regulation of diet, of bowels, with mag. sulph. and colonic flushings, free sweating and the administration of one pint of inf. junip. with one ounce potass. bitartr. per day) benefited her considerably for several months, when her condition again became stationary and then gradually worse. Was called to see her May 5, 1903. Patient confined to bed—more or less for about a year—continuously since January. Complains of great weakness; unable to do anything; of dyspnea upon any exertion; no particular trouble with stomach except off and on on account of medicines; appetite good; bowels rather constipated; passes very little urine—probably a pint in twenty-four hours; does not sleep well; no headaches now; has had chills and fever; has not menstruated for over a year.

Examination.—Pulse 88, regular; full; some increased tension; temperature 100.4°; skin pale; hands and feet cold; puffiness of eyelids; no edema of hands; lower extremities only slightly edematous (lying in bed); marked ascites reaching about four inches above the navel and measuring thirty-four inches around waist and thirty-nine around abdomen; heart practically negative; accentuation of aortic second tone; no particular hypertrophy; no valvular lesion; lungs

negative; ophthalmoscopic examination negative; no retinitis albuminurica; moderate congestion; indistinctiveness of disk, has had no particular trouble with eyes, except a year ago, when she experienced blurring, etc., upon reading or sewing. Examination of urine, see table. Treatment.—Placed her upon Stront. Lact., Basham's mix., Asaf. Comp. and Pulv. Jalap. comp., with the general measures as advised previously.

About this time I read for the first time in the "Therapie der Gegenwart" of April, 1903, an extensive abstract and review of Edebohls' operation for Bright's disease. I at once corresponded with Dr. Edebohls, and asked him for further information. He replied by kindly sending me two of his reprints. After carefully studying these and convincing myself that a physician of Dr. Edebohls' character and ability could not possibly be mistaken or fool the profession, and after carefully considering the general condition of my patient, I concluded that she had a chance with the operation, and consequently advised, but did not urge, her to take this last chance.

Operation.—Entered St. Joseph's Hospital, of Mankato, a week previously (June 2, 1903). Condition about the same as when seen about a month ago. The one week's treatment before operation (medicines, sweating, etc.) did not increase amount of urine passed nor decrease the ascites. Aspirated seventy-three ounces of ascitic fluid day before operation, but succeeded in only partial evacuation. Operation, June 9, 1903, assisted by Dr. Webster; anesthetic (ether) by Dr. Bjelland. Had her given previously two oz. of whisky and two oz. of pept. milk, per rectum, and strychn. 1-30, morph. 1-6, and atrop. 1-150 hypod. Took the anesthetic quite well; pulse remained good; color poor owing to posture, etc. Returned from operating room in fair condition. Pulse good, 108; marked edema of face. Had during operation one comp. dig. tablet, 1-20 gr. of strychn. and one quart of normal salt solution per rectum. Time of operation was one and one-half hour, owing to the immense difficulties encountered in delivering the kidneys. In operating I followed the technic as described by Edebohls, except that in splitting the capsule I used a probe-pointed scissor, which is more convenient and efficient than a grooved director and knife. Began on

the left side with a vertical incision (Edebohls) extending along external border of erector spinæ muscle from the twelfth rib to crest of ilium; separated latissimus dorsi along course; retracted iliohypogastric nerve upward and divided transversalis fascia. Palpation showed kidney situated entirely beneath the quadratus lumborum and erector spinæ muscles and three-fourths or four-fifths of it above the lower border of the twelfth rib.

Delivery of the Kidney.—This was one of the most difficult of tasks; it was firmly lodged in its place, so that it could not be moved or influenced by position or traction, and it was at once apparent from the position and size of the kidney that the incision (space) was inadequate because of the unyielding muscles covering it, the high position under the ribs and the line of incision (vertical instead of oblique). I carried the lower angle of the incision further forward and downward, and thus gained somewhat more room, but not enough where most needed (above) to expedite matters. After a great deal of disturbance of the overlying, loose fat, and considerable manipulation of the kidney, I succeeded in freeing it under the ribs from its fatty capsule, and, after much pulling and tugging, in bringing it below the twelfth rib and out of the wound. There was considerable tension on the pedicle. Note.—I found that delivery of kidney was only possible, and even then difficult, after I succeeded in freeing it all around everywhere from its fatty capsule. No amount of repeated counterpressure from in front, pulling on the fatty capsule, or traction on the kidney itself, would budge it from its firm bed (attachments). The organ was greatly enlarged (large white kidney) about two and one-half inches thick by five and one-half to six inches long, instead of one by four inches (normally); it appeared and felt swollen, nodule, the surface was irregular, with large smooth areas protruding, and had a mottled, grayish red appearance; thickly scattered over the surface were small opaque areas of fatty degeneration; the capsule was probably not thickened.

Decapsulation.—Was readily accomplished with a probe-pointed scissor; cut away capsule near hilum.

Replacing the Kidney.—After irrigation with warm normal salt solution, and carefully mopping

the organ and surroundings, and trimming away loose and redundant portions of the fatty capsule, the kidney was returned to its former location. In replacing the kidney care must be exercised to avoid twisting of the pedicle (by turning the organ upon itself or by pushing the lower pole up instead of the upper), to see that it lies in its former location and flat on its side, with the convex border towards the back, as in either case a twist or kink—an obstruction—would result, which might—undoubtedly would—jeopardize the success of the operation. I have not seen this precaution before, but deem it of sufficient importance to refer to it here.

Closure of the Wound.—Owing to the extensive disturbance of the fat and considerable oozing of serum, drainage was deemed necessary. Therefore a strip of iodoform gauze was carried down to the bottom of the wound and another strip along under the skin, which was closed by interrupted silkworm-gut sutures—after bringing together the transversalis and lumbar fascia by a running catgut suture. The same technic was followed on the right side, except that I used a more curved incision to begin with—with convexity to back—and in closing the wound put no iodoform gauze at the bottom of the incision, but simply carried a strip along under the skin which, apparently, answered all purposes. This kidney was of the same size and appearance as the left, and was situated entirely above the lower border of the twelfth rib.

POST-OPERATIVE HISTORY

Much of this is contained in the table of urinalysis, etc., appended. There was considerable shock and pain in back following the operation. The pain was relieved by two hypodermics of morph. $\frac{1}{8}$, atrop. 1-150. The shock was counteracted by strychn. 1-20 hypodermically every two to four hours, and normal salt solution one pint per rectum every four hours. There was considerable wound discharge, so that the dressings had to be changed the first evening. Passed twenty-six ounces of urine the first twenty-four hours, great thirst, did not vomit. After the immediate effects of the operation had passed off, patient made a very satisfactory convalescence from the operation, except that she did not sleep well. Removed drains on fifth day, the stitches

on the eighth, both wounds healed primarily. The pulse on first evening was 96, the temperature 101° ; second day, pulse 100, temp. 102.6° ; third day, pulse 84, temp. 99° , which was never exceeded again. During the nearly four months patient was at the hospital she went through a number of "ups" and "downs" (periods of improvement, standstill or set-backs), as shown in the accompanying table. The first interruption (exacerbation) occurred about a week after operation, the second about five weeks, the third about eight weeks—following the then applied "anti-dropsical" treatment, the fourth about three months—after a week's use of green vegetables, and the fifth and last about four months after operation and the use of a full and non-restricted diet. The "anti-dropsical" treatment referred to was not employed with any thought of thereby favorably influencing her kidneys, but solely to reduce her "bloating," which was uppermost in her mind. It did this very effectively, reducing her circumference from thirty-six to twenty-nine inches. The treatment, which was very trying, consisted in the administration of the following two prescriptions as follows: No. 1, R. sulph. quinin., gr. 30, sulph. iron, gr. 30, pulv. digitalis, gr. 30, triturate thoroughly, fill into 30 No. 2 capsules, and give three daily at each alternate day, as the first, third, fifth, etc. No. 2, R. elaterium, gr. 4, calomel, gr. 20, pulv. squills, gr. 40; triturate thoroughly, fill into 30 No. 2 capsules, and give on the days between, as the second, fourth, sixth, etc., at 6, 9, and 12 a. m. When taking No. 1, liquid food is to be taken; with No. 2 no food at all.

From the time of her last set-back (October, 1903) her improvement has been a steady and progressive one, as evidenced by the following extracts of letters received from her. October 26, 1903, (first letter):

"Dr. K. received your letter and read it to us, and you seem to think that there might be some show of getting well yet? Well, I don't think there is anybody else that has any hopes of me ever getting well. But, Doctor, don't faint when you get this letter, for I know you will be awfully surprised, and will hardly believe it when you will hear how much urine I pass now in twenty-four hours, and that I don't diet any more, but eat three big hearty meals a day, and eat any-

thing I crave for, and it don't seem to hurt me a bit. I dieted for two weeks yet after I got home, but as I seemed to be getting worse instead of better, so I thought I might as well eat as to starve myself to death, and so told my folks that I was going to start in to eat now. The first week I thought I would die, I felt so miserable after meals, and a week ago last Friday night I thought I would have to send for a doctor to tap me, but I stood it till morning, for you know how well I love to be tapped. But, to my own and everybody else's surprise, I didn't have to be tapped. There was such a sudden change that I don't know what to make of it, and I know that you will be surprised to hear of it. I got ten inches smaller around the abdomen since a week ago last Saturday, and I pass from sixty to seventy ounces of urine in twenty-four hours, that is since that sudden change. Last Friday I was out riding for the first time since I am home, and I didn't swell up a bit like I always did if I'd sit up any length of time. Last night I had quite a hard nose bleed; that's something very unusual; I don't remember the time that I had a nose bleed. I still take those hot packs (sweats) every other day, but I don't take a drop of medicine of any kind, only salts for my bowels. I passed fifty-nine ounces of urine the last twenty-four hours, and I will send you a specimen of it so you can see what it looks like now, and whether that sudden change is for the better or worse. I feel pretty good the last week."

December 24, 1903, she writes: "I herewith send you a specimen of urine. I pass from thirty to thirty-seven ounces in twenty-four hours; it was only for a week or two that I passed so much urine. The swelling is about the same as it was when I left the hospital. I do not take any more sweats (hot packs), measure thirty-five inches around the abdomen. I won't complain, for I feel pretty good and eat everything same as anybody else, and it don't disturb me one bit. I eat meats and gravy, eggs, fried pork, beef, chicken, veal, fried and stewed cabbage, tomatoes, potatoes (fried and boiled) sauerkraut, carrots, pickles, horseradish, mustard, bread, biscuits, cake, pie, pancakes, fruits of all kinds, dumplings, and a good many German dishes that I can't name. That's enough to keep me alive, don't you think so? I do not pay any attention about salting my

food. Well, Doctor, you cannot imagine how good it seems to me to eat once more after being starved as long as I was. To see me eat, nobody would think that I was sick, for I eat so hearty. I feel well, and my color is lots better. I am not near so pale as I was when you last saw me."

February 24, 1904, she writes: "Have sent you another specimen of urine; how I know it isn't any better is through the doctors around here that have been testing my urine before and after my operation. All the doctors that have ever treated me, or those that have heard of my sickness, think it quite a miracle the way I hold out, I mean that I don't die, and the way I eat everything and eat so hearty, and it seems to agree with me, for I have gained in strength wonderfully since I began to eat." In answer to this I replied: "I do not regard it as a miracle that you are doing so well, because it is fully explained by the much better action of your kidneys when compared with before the operation. Although you may pass just as much albumin and casts, this is not as important as the rest—the amount of urine, of total solids, of urea, etc. These factors are not usually examined for at all, and the doctors you refer to simply leave them out of consideration, and hence the wrong conclusions. So long as your kidneys perform the same amount of work, you needn't worry or care—albumin or no albumin."

June 1, 1904, she writes from South Dakota, where she went visiting:

"I feel real well, and seem to be gaining in strength right along. I feel better now than I have for the last nine years. I am menstruating again since March. Did not menstruate for two years."

August 5, 1904, on her return home, she called on me; did not recognize her, she having changed so markedly. She looked and felt as well as anybody.

February 12, 1905, she writes: "I feel real well, and do light housework right along."

May 21, 1905 (last letter): "Sent you a specimen of urine, as requested. In regard to food and exercise, I eat anything and everything that I like"—same list as before. "I drink two cups of coffee (medium strong) a day, no tea or liquor of any kind—because I don't like it. Everything tastes good to me, and has no bad effects on

me, like it did a few years ago. I sleep well, and do all my own housework, all but the washing, and I really believe that I would be able to do that, but my folks won't let me. I don't have to lie down during the day like I used to; I can sit at the organ two hours at a time for amusement, so you can think that I am pretty strong again in my back. Three years ago I couldn't sit up at all or raise my head off the pillow to take a drink of water. I had to take all my medicines and water through a long glass tube. I also helped with housecleaning this spring, and it had no bad effect on me. I can't complain, for I am quite strong again, and feel real well. I always have a good appetite. My feet don't swell a bit, nor any other part of my body. I have not taken any medicine since October, 1903, nor any sweats and the like, since December, 1903. I measure twenty-five inches around the waist now, just what I measured before I took sick. There was a time when I measured forty-four inches,—that was when I was so very low, when my physician said that I could not live till morning. I take quite good care of myself, don't expose myself to cold or wet weather, don't go out to dances or parties. The only place I go to is to church and to town twice a week; we live one mile from town, and I walk it. I think that's doing pretty good for me. It almost seems a miracle for me to be as well again as I am now, after being so sick for so many years."

There are several points, already referred to, which I wish to go into a little more in detail before closing this paper:

1. I believe, from a careful study of the literature and my own observations in this case, that the Edebohls operation for Bright's disease is deserving of further trial, and that we are not only justified in recommending it in suitable cases after the various therapeutic measures have been sufficiently tried and found wanting, but that it is our duty to do so.

2. That this operation, like any other, has not only its indications, limitations and contraindications, as already pointed out, but also its difficulties: (a) unusually small space between last rib and ilium, either due to a natural short waist, or great length and obliquity of the twelfth rib; (b) undue mobility of the kidney, so that it may be difficult to locate it; (c) perinephritic adhesions

The following TABLE shows the result of the many *urinary examinations*, with some GENERAL REMARKS:

TABLE OF ANALYSIS OF URINE AND GENERAL REMARKS

Date	Color	Re-action	Sp Gr	Am't of urine, 24 h'rs. (ozs.)	Total solids (gr'ins)	Urea		Albumin		Sediment Microscope examination	Remarks
						per cent. (Doremis)	Am't 24 hrs (grains)	per cent. (Esbach)	Am't 25 hrs (grains)		
1903 Feb. 3	pale	neutral	1012	20	264	1.2	115	1.5	144	Large am't of vag., bladder and renal epithelium, hyaline and granular casts.	Ordered free sweating and ingestion of 1 pt. Infur. junip, with 1 oz. potas. bitartrate per day; reg. of diet and bowels.
Mar. 5	straw	neutral	1022	21	508	1.5	151	1.2	121	Less epithel., fewer casts.	
Apr. 15	amber	acid	1030	17	561	2	163	1.1	89		
May 5	l. amb.	acid	1022	18	435	1.6	138	1.3	112	About same as Feb. 3.	Placed her upon stront. lactate, Basham's mix., pulv. jalap comp., with gen. measures.
June 2	amber	acid	1030	17	561	2	163	1.1	90	Considerable sed., large number of renal epithel., hyal., gran., and epithelial casts.	Entered hospital.
June 9	amber	acid	1030	18	591	2	173	1.2	103	Ditto.	Day of operation.
June 10	l. amb.	acid	1020	26	572	0.7	87	0.8	99	Less sed., hyal. and gran. casts less; epithel. casts more; quite a few leucocytes and red blood corpuscles, but most striking change is in the presence of large number (5 to 20 to field) of fatty renal epithel. cells, about size and appearance of an eosinophile, some larger, some smaller, and in all stages of fatty degeneration. In some nucleus still present, in many not; form of cells mostly round.*	Day after operation.
June 11	l. amb.	acid	1022	24	576	1.3	150	1.2	138	More sed. again; about like before; hyal. casts still less, gran. about the same; epithel. and leucocytes more; red blood corpuscles less; great reduction in the fatty epithel. cells so many present yesterday; show less fatty degeneration today.	
June 13	l. amb.	acid	1020	26	572	2.1	262	0.6	75	Sed. about same; still fewer hyal. and gran. casts than before, but more epithel. casts fatty epithel. cells diminishing.	Placed her on stront. lact.—20 gr. t. i. d.
June 16	l. amb.	acid	1022	22	528	1.7	179	0.8	84	Sed. more like before operation; relatively more hyal. and gran. and fewer epithelial casts; also fewer fatty epithelial cells.	A week after operation, there is a tendency towards less urine, less solids, less urea and more albumin.
June 20	l. amb.	acid	1028	15	462	1.8	130	1.5	108	Still many epithel. casts present; moderate number of fatty renal epithel.; many renal epithel. cells show cloudy and gran. deg.	Has been sweating for two days and bowels more free; this would also influence (reduce) amount of urine.
June 23	amber	acid	1025	16	420	1.7	133	1.2	94	Am't of sed. about same, but microscopically there seems to be an improvement in the number and quality of casts and renal epithel.	Not doing well; aspirated today 135 oz.—sp. gr. 1014. Placed her on Basham's mix. with stryeb. 1—32. instead of stront. lact.
June 27	amber	acid	1024	19	501	2.2	200	0.8	73	Am't of sed. less; improvement in number and quality of casts and renal epithel.; fatty element disappearing; decidedly fewer epithel. cells.	Has been sweating better (more freely) the last 2 or 3 days, but the ascitis is increasing again.
July 1	amber	acid	1025	22	605	2.2	232	0.7	74	Ditto.	Is improving again; Is sitting up while bed is made.
July 4	amber	acid	1026	28	653	2	221	0.9	99		
July 8	amber	acid	1026	23	653	2	221	0.8	88	Sed. about same; still some fatty epithel. cells.	
July 11	l. amb.	acid	1028	27	831	2.2	285	0.8	104	Sed. gradually improving; the casts are assuming more and more the hyal. and gran. variety; the epithel. cells are losing their hyal. and fatty nature. Uric acid crystals present today.	
July 15	l. amb.	acid	1030	17	561	2.3	188	0.8	65	.....	Not doing as well; placed her on stront. lact. again.
July 18	l. amb.	acid	1030	19	627	2.1	191	0.9	82	No uric acid crystals.	

*First specimen voided after the operation.

Date	Color	Re-action	Sp. Gr.	Am't of urine 24 h'rs. (ozs.)	Total solids (gr'ins)	Urea		Albumin		Sediment Microscope examination	Remarks
						per cent. (Doremus)	Am't 24 hrs (grains)	per cent. (Esbach)	Am't 24 hrs (grams)		
July 22	l. amb.	acid	1025	30	825	1.9	273	0.6	86	Sed. gradually improving in quantity and quality.	Is doing better again; is sitting up and making gauze sponges, etc., considerable of the time; looks good—better color; appetite good; sweats well.
July 27	l. amb.	acid	1020	35	770	1.8	302	0.55	92		
July 31	amber	acid	1022	32	774	1.9	292	0.6	92	Very little sed.; great improvement microscopically; gran. casts practically disappeared; no more free epithelial cells. The urine shows a most striking change for the better the last two weeks; her gen. condition is improving correspondingly.	Doing nicely; passes good amount of urine; sweats well; ascitis diminishing again; sleeps fairly well; has an unusually good appetite; is getting stronger right along. The writer will be away on a vacation for 2 weeks.
Aug. 17	l. amb.	acid	1030	32	1056	2	307	1	154	Not as favorable as 2 or 3 weeks ago; more casts also again renal epithelial cells—some fatty, many cloudy.	Did not do quite as well last 2 weeks; did not sweat as well; bowels not as good; again a tendency toward more swelling.
Aug. 20											Placed her upon the anti-ascitic treatment.
Aug. 24	l. amb.	acid	1028	22	677	2.1	222	0.6	63	Sed. and casts a little less again.	Felt very tired, weak and hungry after first day of fastig.
Aug. 27											Could not retain the No. 2 capsules; is very weak; has a craving appetite; is getting thinner.
Aug. 31	l. amb.	acid	1028	10	308	2.8	134	1.5	72	After 10 days of "fasting" and "antidropsical" treatment; liquid diet now. Note small am't of urine, urea and total solids; the sediment, if anything, a little better; fewer gran. casts.	Anasarca completely gone now, everywhere; legs as thin as arms; measures only 29 inches around abdomen. Is very weak; suffered extremely from hunger.
Sept. 5	l. amb.	acid	1015	20	330	1.1	106	0.3	29	Sed. practically none; remarkable improvement over last 2 to 3 weeks.	Doing satisfactorily; allow fruits and green vegetables.
Sept. 9											Some puffness of hands and eyelids again; resumed hot bath (sweats) and Basham's mix.
Sept. 11	amber	acid	1035	16	616	3	230	1.1	85	Sed. worse again in quantity and quality; also the albumin; total solids and urea better.	Abdomen enlarging. Patient thinks the vegetables do not agree with her; ordered them off.
Sept. 18	l. amb.	acid	1022	27	807	1.6	207	0.4	52	Sed. better than last week.	Improving again.
Sept. 25	amber	acid	1024	25	660	1.6	192	0.4	48	Great improvement; only moderate number of hyal. casts now.	Patient is about to leave the hospital. Feels and looks better again; is quite strong; is up and about reading or doing some hand work, etc., nearly all day; appetite good (liq. and light diet); sleeps well; there is moderate swelling of the limbs and face, and moderate ascitic. She now has a fair color.
Sept. 28 †											
Oct. 10	l. amb.	acid	1022	30	729	1.8	219	0.7	101	Very little sed.; only a few hyal. casts.	Patient at home since Sept. 28.
Oct. 28	l. amb.	sl. acid	1022	59	1428	1.2	340	0.8	226	Ditto.	Has been on full diet for last two weeks; passes large amounts of urine; ascitis less; feels better; takes no medicine.
Dec. 26	l. amb.	acid	1025	35	962	2	336	1	168		Does not take any more sweats (hot packs); enjoys her full diet; feels good; color better.
1904											
Feb. 19	l. amb.	acid	1030	30	990	1.5	216	1	144		Is gaining greatly in strength.
July 5	l. amb.	acid	1020	53	1166	1.1	280	0.2	51	Very little sed.; only a few hyaline casts.	Is gaining in strength right along; feels better than for nine years.
Aug. 5											Called on me; did not recognize her—looked so well.
Nov. 5	l. amb.	acid	1016	50	880	1	24	0.1	24	Sed. better than ever; only an occasional hyaline cast.	
1905											
Feb. 22	l. amp.	acid	1020	39	858	1.3	243	0.15	28		Feels real well; does light house-work right along.
May 23	amber	acid	1026	4	1287	1.7	367	0.1	22		Feels well; does her own house-work; eats hearty; no anasarca (swelling) anywhere; see her last letter (post-operative history).

†Patient left the hospital for home.

or high location up under the ribs; especially when enlarged, as in my case. I saw two cases operated upon since in which there was great difficulty in delivering some of the kidneys and it was impossible to bring out the others; (d) firm attachment of the capsule proper in some cases of interstitial nephritis.

3. That certain precautions must be observed to insure the best results; (a) the patient should be carefully prepared for operation; (b) the development of shock and anuria should be counteracted by appropriate measures; (c) the iliohypogastric and ilio-inguinal nerves are to be preserved; (d) undue trauma to the kidney proper and the surrounding structures should be avoided; (e) in replacing the kidney care must be exercised to avoid twisting of the pedicle, as already explained.

4. Much has been said about posturing the patient to facilitate delivery of the kidney. This will increase the working space, and help to bring up a loose kidney, but will not influence a normally situated kidney up under the ribs; on the contrary, it has occurred to me that a pillow or roll might increase the difficulty.

5. It has been advised to grasp the fatty capsule with a number of small forceps, and thus draw out the organ, but this again is only possible if the kidney is movable.

6. I was not satisfied with the vertical incision, as recommended by Dr. Edebohls. The carrying of the lower angle forward makes little or no difference as far as delivering a kidney situated beneath and above the ribs is concerned. Nor does incision of the border of the erector spinæ and quadratus lumborum, nor retraction of the wound edges make any particular difference. Such modifications of the straight incision increase the working space between the ribs and the ilium, but have practically no effect in better reaching above the upper angle of the wound. This difficulty can only be effectively overcome by making an oblique incision parallel with the twelfth rib, and, if necessary, by resecting the latter. Thus retraction can be exerted upward, and thereby the kidney rendered more accessible and more room obtained for the hand. In this way considerable time is saved, the fat is disturbed less, and the kidney is spared undue trauma—through handling, pulling, tearing, etc.

7. When we consider the chronic and widespread changes taking place in chronic nephritis, and the more or less protracted time necessary for repair and regeneration, it is not strange that set-backs (exacerbations) should occur. This ought to impress us with the necessity of careful after-treatment and supervision of the case. If the case here reported should have been allowed to drift for herself after recovering from the effects of the operation, she would, I believe, not be alive to-day. It might be claimed that the favorable results thus far obtained in this case are not due to the operation, but to the various other measures employed. To this I would reply that all of them had been used before in this case (and similar ones for generations), and that, so far as I know, no case of chronic Bright's disease has ever been cured or so favorably influenced by them. There is no question in my mind as to the role the operation played in the final results.

8. In referring to the observations made tending to corroborate my theory of an alterative effect upon the kidneys, I had in mind the effect of the paracentesis, the "anti-dropsical" treatment, and perhaps the decided effect of the abruptly resumed unrestricted diet.

9. In explanation of the sudden and decided change for the better after patient—four months after operation—abruptly resumed a full and unrestricted diet, I would offer the following: The sudden change and increase of the diet naturally meant an increased and unusual amount of work for the kidneys. They were not prepared for this, and, consequently, "balked" at first; that is why patient felt so miserable, etc., for a week or so. But instead of becoming overwhelmed and a condition of uremia developing,—as was the case in January, 1903,—her kidneys reacted and became "master of the situation," notwithstanding the "uphill work" they were put to. What does this show? Plainly, that while a year ago last winter her kidneys had no reserve power (no elasticity), they have such now; in other words, they are in better shape now, as otherwise the patient would have kept on getting worse instead of better. It would be interesting to know positively how this remarkable reaction took place. It could be explained in several ways. First, that through the sudden overwork to which the kidneys were subjected, such a strain or congestion was produced that new blood and urinary channels were opened up (brought into action), resulting in increased

kidney action. Second, that the kidneys, although in better condition, were compressed somewhat in the healing process—the contraction of the wound—and that through the sudden congestion (distension) relief was obtained. Third, that possibly collateral circulation—from outside—was established about this time and was brought into action.

10. In closing, I wish to emphasize that the mere presence or absence of albumin or casts in the urine is not so important as the question whether or not the kidneys are performing their function otherwise. So long as the organs are able to do their work,—the amount of urine, total solids and urea, etc., approaches the normal or nearly so,—the patient will feel comparatively well, whereas if there is failure in this regard, with the same amount of albumin or casts continuing, there will be failure in health, development of anasarca and complicating organic lesions elsewhere, and ultimate decline and death. Therefore we should not base our diagnosis and prognosis upon a partial urinalysis (the finding of albumin and casts), but make a complete examination, and in particular consider the functional capacity of the kidneys—carefully estimating the amount of urine, total solids and urea excreted. This suggestion becomes even more apparent when we remember that a kidney may be the seat of a serious chronic nephritis, without albumin or casts being present in the urine.

In reporting percentages of albumin it would greatly favor uniformity, would materially simplify matters, if all percentages were estimated by weight (this being more precise and reliable), instead of by volume. Until the adoption of some uniform method it is desirable—yes, necessary—that the method employed be designated. (See page 619, Jour. A. M. A., Aug. 27, 1904.)

DISCUSSION

DR. H. A. TOMLINSON (St. Peter): I undertake with considerable diffidence to open the discussion of this paper, because it may seem presumptuous for a mere medical man to attempt to criticize a surgical procedure. However, after listening with interest to the clinical record of the case presented, and following carefully the references and the argument of the writer, I am unable to see that he has presented any evidence that the removal of the capsule brought about the result that he ascribes to the operation. In the conditions that he describes, all sorts of procedures have, in similar cases, brought about the same result. If we consider the careful measures carried out before the operation, the loss of blood, the stimulating effect of the necessary manipulation of the organ, and the judicious after-treatment, it is at least doubtful that the result was dependent in any way upon the removal of the capsule. However, this uncertainty is not an argument against the operation or its usefulness, even if the result is apparently *proprie hoc*. The term "Bright's disease" is very inclusive, and yet means very little, because it is applied very indiscriminately, and to define exactly opposite pathological conditions.

If we consider the anatomy of the kidneys we shall recognize at once that the nutritional and functional blood supply of the organ are not the same; and that in disease of the organ itself, the functional blood supply is not concerned. Again in an organ, the functional activity of which is so great, there must be required a relatively large blood supply for its mere nutrition, and a relatively free and sufficient means for elimination of the rapidly accumulating waste material. The importance of this provision is apparent in the arrangement of the blood vessels in the cortex of the kidney, the venous plexus, and the lymph channels under the capsule. Therefore, in considering operative interference with the kidney, it is important to recognize the conditions we are probably dealing with in the individual case. Is the disease in the kidney organic, producing progressive degenerative change in the blood vessels, and a relative connective-tissue increase; or is there a diseased condition that interferes with the progress of the blood through the kidney with relation to the function of the organ? It is obvious that in degenerative disease, nothing is to be gained by decapsulation; and much harm may result to the organ itself from the interference with the lymph channels and the venous plexus by the newly formed connective tissue, after the removal of the capsule.

However, if the change is parenchymatous, and the increase medullary, that interferes with the free circulation of blood through the functional blood vessels, removal of the capsule might, by allowing expansion in the volume of the kidney circulation, aid in the re-establishing of the functional capacity of the organ. This is probably the way in which the operation of decapsulation does the good attributed to it. Theoretically, there is no reason why this operation should be beneficial, and I do not believe that it is permanently so, because scar tissue always contracts. The fact remains, however, that in many cases like the one reported in the paper, the result is apparently good; but it remains to be proven that the good result is not the sequence of the regime of preparation and after-treatment, and the manipulation of the organ and its environment. We are all familiar with the influence of these procedures in other chronic organic affections, and know how reparative processes are set up or degenerative changes stopped by the manipulation of diseased tissues. In two cases of decapsulation that I have seen post mortem, none of the changes were found in the kidney which the advocates of this operation would have us believe take place.

Like all such procedures this one may be the means of doing a great deal of harm, if the surgeon fails to recognize the fundamental pathological changes that underlie disease in the kidneys, and their significance.

DR. L. F. SCHMAUSS (Essayist): I have nothing in particular to add to what has already been said. It is hardly creditable that a subject of such importance should be passed over in this way.

In reply to the few remarks Dr. Tomlinson has made, I would say that nearly all things that have been tried on this patient prior to operation have been used for generations and without benefit to any extent, so we can safely conclude that this operation has much to do with the results, and it is only another evidence that the case was benefited, if not cured.

In regard to the kind of nephritis, Edebohls assumes that it does not make any difference whether it is a parenchymatous or an interstitial disease. Even if it only benefits the patient the operation is justifiable.

HOSPITAL BULLETIN

ASBURY HOSPITAL

MINNEAPOLIS

SKIN-GRAFTING IN BURNS OF THE HANDS

IN THE SERVICE OF DR. ARCH A. E. WILCOX

From a record of 600 cases of accidental injury occurring in Minneapolis from Jan. 1, 1903, to June 1, 1905, I have selected two cases of severe burns of the hand which are of special interest in regard to treatment and prognosis.

CASE I.—Miss S. D., aged 28, Scandinavian, working in a laundry, accidentally placed her hand in such a position that the rollers of the machine which she was attending caught the right hand rolling the same inward, and holding the member there for at least a half minute. It was found necessary to stop the mangle, and reverse the rollers to extricate the hand.

The case was seen shortly after the accident. Naturally there was considerable pain accompanied by shock.



Case 1.

Examination of the hand showed that the burn on the palmar surface extended from the lowest furrow of the wrist to the distal phalanges of the fingers. On the dorsum of the hand a large patch of soft tissue about three or four inches in diameter was destroyed.

Morphine and strychnine were given freely to control the pain and to counteract shock, and a temporary dressing of carron oil was applied to the affected part.

As the sloughs came away it was possible to determine the depth of the burns. On the palmar surface they extended as deep as the periosteum, and on the dorsum for an area of two inches in

diameter through the skin and extensor tendons.

Pain in the index finger attracted attention about the fifth day, and careful examination disclosed fracture of the first phalanx.

The hand was dressed frequently with carron oil, the dressings being protected by rubber tissue, and the whole placed upon a palmar splint.

At the end of four weeks the sloughs had entirely separated, and the patient was removed to the hospital where skin grafts from the thigh, after Thiersch's method, were transferred to the burned areas.

The method of making a skin flap on the back of the body, leaving both ends united, then slipping the hand through, was considered and advised, but this was not possible, and it was only after considerable argument that permission was granted to do the Thiersch method.

Up to the time of placing the grafts the fingers were kept from growing together by placing gauze between them close down to the webs.

It was in this locality that the greater difficulty was encountered in making the grafts hold long enough to apply rubber tissue over them. This was accomplished in the following manner:



Case 2.

The length of a graft necessary to cover the adjacent sides of two fingers was carefully estimated, and these were cut and placed. Starting at the distal end of one finger (inner side), and spreading the graft out on the lateral side of the same finger down to the web, it was then bent and carried out on the lateral side of the adjacent finger. This was done on all of the four digital intervals, the areas then being covered with rubber tissue.

All the grafts in this case grew nicely except a small part on the dorsum, and it was found necessary to place a few small grafts upon this area at a second sitting.

The result of grafting in this case was quite satisfactory.

CASE 2.—Miss G. S., aged 22; occupation laundress. In trying to prevent a piece of linen from entering the mangle at which she was working her hand was caught and carried between one "live roll," facing the dorsal surface and forearm, and a dead roll facing the palmar surface, and therefore the latter surface escaped injury.

The area burned extended from a point midway between the wrist and the elbow down to the tips of the last phalanges of the fingers.

This case was seen shortly after the accident. There was considerable shock and severe pain, which was only controlled with morphine and strychnine. The hand was cared for much in the manner as that of the first case until the sloughs separated, and a clean granulating surface was presented. Examination then showed that, with the exception of that of the thumb, all of the extensor tendons for two or three inches in length corresponding to the back of the hand, had been literally burned away, and that the metacarpal bones and the interosseous tissue alone remained. The areas between the fingers were also severely burned.

In this case the operation of making a flap on the abdomen, leaving the two ends intact and slipping the hand through, was considered and advised, but, as it was, the low degree of intelligence and the rebellious nature of the patient nearly prevented the course ultimately pursued, which was as follows:

The burned areas between the fingers were covered in by the Thiersch grafts, the same as in Case 1, and also the area over the phalanges and the forearm. The middle of the dorsum of the hand was not covered at this sitting as the granulations had not reached a level with the bones, and it was thought wise to wait, with the view of obtaining a better base upon which to place grafts.

Two weeks later at a time when the grafts which had been placed were firmly adherent, the possibility of turning down a flap from the inner side of the forearm to cover the exposed metacarpal bones was considered, and at a second sitting this was attempted.

A rubber-tissue pattern was made, to correspond to the area to be covered, and then laid upon the skin of the forearm. A flap was then cut one-quarter inch larger than the pattern so as to allow for shrinkage, and was turned down and fastened to the skin at the base of the phalanges. The free surface remaining at the site from which the flap was taken was then covered in with Thiersch grafts from the thigh.

On the second day the flap was found to have a poor blood supply, and the distal end had be-

come gangrenous for about one-half inch from the tip. It seemed advisable to remove the flap entire even though there was a sharp line of demarcation about the middle. Though somewhat discouraged as to what method to employ now to cover in the bony surface, more large Thiersch grafts from the thigh were placed directly upon the metacarpal bones and interosseous spaces.

Upon examination at the next dressing the grafts seemed to adhere firmly. The granulations between the bones took on more rapid growth, and gradually filled up the interosseous spaces.

Improvement continued and at the end of three months from the time of the last operation, the surface was well covered in with skin, except two or three small openings or sinuses. These were opened, and small portions of necrosed bones were removed. Closure and complete recovery rapidly followed.

The photograph of Case 2 shows the amount of deformity at the end of nine months. While the patient's fingers are partially stiff, there is a freely movable thumb and consequently a fairly useful hand.

These two cases demonstrate the following:

1. Conservatism in surgery often brings surprisingly good results.
2. Skin-grafting for cases of burns decidedly hastens repair, and tends to lessen contraction of scar tissue. This was particularly demonstrated in Case 1, where the palmar fascia was destroyed.
3. The possibility of placing grafts successfully between the fingers, thereby maintaining the normal division of the soft tissues at the digital intervals.
4. Case 2 demonstrates that grafts will grow on bone, or, at least, will encourage granulation tissue to such an extent that it is well worth trying in all cases.
5. Simplicity of technic makes it possible to do this operation without elaborate apparatus.

In both cases the granulations were left pretty much as nature had formed them before the grafts were placed. They were not scraped down with a knife, but were merely wiped clean of blood and discharge with gauze.

The area from which the grafts were taken was cleansed with soap and water, and then washed with normal salt solution.

No apparatus is used to put the skin on the stretch. An assistant merely holds the skin tense with his hands, and an ordinary razor is used to cut the grafts, the motion being see-saw in character.

The larger and the thinner the grafts, the more quickly they help to form new tissue, and the firmer they unite with the granulations. It is worthy of note that the dressings, which were

rubber tissue in contact with the grafts covered with gauze saturated with salt solution, were removed and changed every day instead of leaving the first dressing for four or five days, as is the usual custom.

No harm is done the grafts if extreme care is taken in removing the dressings and an additional advantage is that discharges, blood or salt solution which has crept under the grafts as yet ununited, can be expressed, and the grafts returned to a more favorable position for union with the underlying granulations.

SWEDISH HOSPITAL

MINNEAPOLIS.

A CASE OF EXTRA-UTERINE PREGNANCY

IN THE SERVICE OF DR. A. E. BENJAMIN

Mrs. M, aged 32, housewife, Swedish descent.
Family History.—Good.

Personal History.—Had only the diseases of childhood until the present trouble began. Menstruation began at 13 years; was regular and normal in character and amount. Has been married five months. September 5, 1905, was the last normal menstruation period. The next period was missed. She had some symptoms of pregnancy. On October 5, she went out riding and received considerable jolting. The next day while at dinner severe pain was experienced in the abdomen for a short time. In the evening of the next day another severe abdominal pain occurred. The following day, at 10 a. m., she began to have repeated pains. They grew more severe each time, were sharp and cutting in character, and continued for about an hour, when she went upstairs to bed. In the afternoon the pains began to recur. At 8 p. m., she went down stairs, and had no more trouble that night. During the following week she had no particular pain, but considerable abdominal tenderness. October 14, she began to menstruate again. It was more in quantity than usual. A number of clots were passed. The flow lasted three or four days. October 17, she suffered with another pain, and also the following day, at which time a physician was sent for. Three days later, while in bed, another very severe pain came on. This lasted about an hour, the physician was again called. A slight, irregular, bloody discharge continued from her last period. The physician in attendance directed the patient to remain in bed, after which time little pain was experienced, but a profuse flow of blood came on about the middle of November.

On November 20th patient came from out of town to the Swedish Hospital, where I saw her for the first time. A pelvic examination revealed a soft mass, the size of a small orange, to the right of the uterus. An extra-uterine pregnancy was suspected. Her leucocyte count was 15,800, hemoglobin, 85 per cent; a slight trace of albumin was found in the urine. Her temperature was 99°; pulse between 80 and 100.

An operation was performed November 21, 1905. Ether was administered. A suprapubic incision was made. A mass was found in the right pelvis consisting of old blood clots, of some organized blood, a thickened right tube, and an enlarged ovary. The patient was put in the Trendelenberg position, and the intestines packed off from the field of operation. The uterine end of the tube was immediately clamped. The mass was adherent to a loop of intestine, which was discolored, and the vitality of the intestine seemed somewhat impaired at this point. The clotted mass was enclosed by the broad ligament, uterus, right pelvic wall, and intestine. The right tube and mass was removed. A large blood clot was found in the outer fourth of the tube, the seat of the pregnancy. A cigarette drain was placed deep in the pelvis, and the abdomen closed, except where the drain protruded.

The patient was given no food by mouth for two days. Liquid diet only was administered for ten days. The temperature ranged between 100° and 102° for about twelve days. The pulse following the operation went up to 130, but gradually declined to normal; some of the time it was weak. The wound was slow in healing, and there was a considerable discharge through and around the drain until the eighth day when it was removed. The patient sat up on December 15. The abdomen was somewhat distended at that time, and the bowels were made to move with difficulty. She had considerable pain. The temperature rose and the pulse became quite rapid and remained so for a few days. She was placed in bed. Food was excluded by mouth for a time. Her temperature and pulse gradually declined to normal, and remained so from the 19th of December, and by the 21st she was again out of bed. Her leucocyte count steadily declined from the time of the operation to a little above normal, but during the sudden rise of temperature on the 16th, it was 23,000. It again declined and became normal about the 22d of December. She left the hospital on the 29th feeling perfectly well, with good appetite, normal temperature and pulse, and the wound was healed except in a line one-half inch in extent, where the cigarette drain had been placed. A letter received from her ten days ago indicates a return of perfect health.

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NOTICE TO SECRETARIES

Complaints have been received that some of the members of the State Medical Association have not been receiving the JOURNAL-LANCET. This is due, at least in part, and perhaps wholly, to the failure of the secretary of a county or district society to send a full list of the names of society members to the State Secretary.

It would be well to announce at each meeting that every member of a county society who has paid his full dues and is thereby a member of the State Association, is entitled to a copy of the JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION without further cost to him.

If the secretary is delinquent in reporting his membership, the blame must fall where it belongs, on the secretary and not on the mailing department of the JOURNAL. We shall be unable to send back numbers except in cases where there is a special request or for a special program.

The secretaries are urged again to send advance notice of future meetings, and to prepare a program and mail it to the JOURNAL not later than the 9th or 23rd of each month. If this

method is regularly employed it will greatly assist the Councillors.

STATE BOARD OF HEALTH SUGGESTIONS

The prevention of tuberculosis is still a live topic, and if one looks over the records of deaths in the state of Minnesota from this disease, the percentage will be found too high.

The State Board of Health has decided to continue an active campaign of education and prevention, and has prepared various blanks containing information and instruction to physicians and laymen. The list of instructions prepared by the secretary of the Board are clear and simple, and will do much to prepare the way for more energetic means, if needed. The blank for physicians requires a few moments extra work, and carries with it a compensation for services. It was also decided that physicians from any part of the state may send sputum for examination and diagnosis to the State Bacteriological Laboratory free of expense.

From time to time, as occasion requires, branch laboratories will be established at convenient points, in order that quick returns may be obtained.

Eventually the same line of blanks and instructions for the suppression of typhoid fever will be adopted.

The new code of laws which goes into operation March 1st will contain many sanitary suggestions which, if adopted by the Board, will control the spread of disease. To insure success the physicians must be willing to do their share of the work. The rules and regulations require local boards of health to adhere closely to the suggestions, and members of such boards will be urged to educate the people of the locality in which they live to conform strictly to the laws laid down for the benefit of public health.

Physicians will be asked to distribute literature to patients for the suppression of preventable diseases for the benefit of patients, relatives, and friends. The care of the sick room and methods of disinfection will be a part of such literature.

Of about 18,000 deaths in Minnesota in 1904, 2,127 were due to consumption, more than from any other disease. The work at the state labor-

atories will be greatly increased after the new code becomes effective. During the year 1905 there were made 7,488 bacteriological examinations. The number covered a large range of diseases, and analyses of water and milk. At the head laboratory 5,891, and at the Duluth branch 122, cultures for diphtheria were made, besides the following:

For typhoid, at the head laboratory, 727; at the Duluth branch, 100; for sputum, head laboratory, 68, Duluth branch, 49; for rabies, head laboratory, 9, Duluth branch, none; of water, chemical 121, and bacteriological 135; of milk 239.

Among the other bacteriological findings were: tuberculosis ulcer, cow's udder, miliary tuberculosis, gangrene, cerebrospinal meningitis, tetanus, pseudoparasite in man, unknown organism, fatal case of noma, puerperal sepsis, typhoid blood culture from feces, and peritonitis.

Rabies has been on the increase, and has been found, not only in dogs, but in cattle, and the wide distribution of rabies in this state and the experiences of past years show the imperative necessity of a Pasteur institute, which is already provided for in the new building for the State Board. The impression prevails among the laity, and probably among professional men, that rabies occurs only during the summer months, but an investigation of the subject and the recent finding of a mad dog in mid-winter in Minneapolis, whereby several people were bitten, prove that it may be expected at any season.

STOKES-ADAMS SYNDROME

A rejuvenation of an old symptom-group has been brought out in the medical press, and has caused more or less discussion. Alfred Stengel, in the December number of the American Journal of Medical Sciences, describes a fatal case of Stokes-Adams disease, and in the November journal of Experimental Medicine, Erlanger has recited several cases, and the post-mortem findings. In the London Lancet, in 1903, two clinical cases were briefly reported.

The symptom-group was first recognized by Adams, in 1827, but more accurately described by Stokes in 1846. More recently the subject has been discussed by Huchard in France, His, Hoff-

man, and Jacquet in Germany and Prentis, Edes, Osler and Babcock in America.

In brief the symptoms are slow pulse and a rapid heart-beat, and a pulse-rate of 34 may be accompanied by a heart-beat of 124, due to a dissimilar contraction of the auricles and ventricles. The auricles contract and dilate rapidly, and this accounts for the apparent rapid action of the heart-beat; and the ventricles act slowly, and thus explain the presence of a slow pulse.

Cerebral attacks, such as vertigo, syncopal or epileptiform seizures with or without unconsciousness; and pulsations of the veins in the neck, with other evidences of venous engorgement, dyspnea and soreness or pain over the cardiac region, are usually present. In the majority of cases that came to autopsy arterial and myocardial changes were observed. In some cases lesions of the nervous system, such as compression of the medulla or changes in the vagus and cardiac plexus, have been described.

In the case reported by Stengel there was a moderate degree of arteriosclerosis, general in type. The heart was hypertrophied, the left ventricle particularly. The valves were competent, although the leaflets were slightly diseased, and the coronary arteries were thickened, but not calcareous. The endocardium showed a patch of atheroma on the mitral leaflet exactly over the bundle of His, where this band passes from the ventricle to the auricle. The heart muscle was unaffected.

It is evident from the cases reported that the symptom-group is due to the cardiac lesion rather than to a lesion in the nervous mechanism. The attacks may occur at long intervals, and last from a few seconds to several hours. At times the attacks are repeated with great frequency, and death results with the advent of Cheyne-Stokes respiration.

The resemblance to *heart-block* as produced by physiological experiments has been pointed out, and has been the subject of comment when the Stokes-Adams syndrome has been under consideration.

Very little can be accomplished by medication in the way of diffusible and other cardiac stimulants. Rest and hot baths, together with remedies that are advised to soften or relax the ar-

terial walls, like the iodides or nitrites, may temporarily relieve the patient.

The histologic findings in Dr. Stengel's case will be published later.

CORRESPONDENCE

DR. RINGNELL

Minneapolis, Jan. 20, 1906.

TO THE EDITOR:

At the January 12th meeting of the Minnesota State Board of Medical Examiners, Dr. Wm. Davis offered the following resolution, which was unanimously adopted.

Resolved, That the Board hereby expresses its regret at the unavoidable retirement of Dr. C. J. Ringnell from the position of its secretary which he has filled for the past five years. During that time he has performed the duties of his position in a manner entirely satisfactory to the Board, which recognizes at once the difficult and trying nature of these duties and the diligence and faithfulness with which they have been carried out.

Resolved, That this resolution be spread upon the minutes of the Board and that a copy of it be sent to each of the medical journals published in this state.

O. E. LINJER, M. D.,
Secretary pro tem.

REPORTS OF SOCIETIES

STEELE COUNTY MEDICAL SOCIETY

The annual meeting of the Steele County Medical Society was held on January 2d at Owatonna.

Dr. A. B. Stewart read a paper on "Medical Legislation and Medical Societies," and the following were elected officers: President, Dr. W. C. Eustis, Owatonna; vice-president, Dr. F. M. Smerch, Owatonna; secretary, Dr. A. B. Stewart, Owatonna; delegate, Dr. T. L. Hatch, Owatonna; alternate, Dr. George Schulze, Owatonna; censor, Dr. J. W. Andrist, Ellendale.

A. B. STEWART, M. D., Secretary.

MOWER COUNTY MEDICAL SOCIETY

The quarterly meeting of the Mower County Society was held January 2d at Austin, Dr. Peirson, of Austin, presiding.

Dr. F. E. Daigneau, of Austin, was elected censor to fill an unexpired term. Dr. W. F. Cobb, of Lyle, presented, in an inimitable style, a paper entitled "Born Out of Season," which was freely discussed.

Mr. James W. Davidson, U. S. consul at Harbin, Manchuria, gave a very interesting illustrated paper on "Sanitary Conditions in the Orient," which, aside from its instructive merit, demonstrated to the society the value of the ability to observe things.

The following members and invited guests, outside of Austin, were present: Dr. and Mrs. Henslin, of Leroy; Dr. and Mrs. Cobb and Dr. and Mrs. Frazee, of Lyle; Dr. Mitchell, of Grand Meadow; Dr. Schottler, of Dexter; Dr. Chase, of Adams; and Dr. Murphy, of Mason City, Ia.
C. C. LECK, M. D., Secretary.

WRIGHT COUNTY MEDICAL SOCIETY

The Wright County Medical Society held its annual meeting Jan. 2d, 1906, at Buffalo.

The officers elected for the ensuing year are—President, Dr. E. A. Shannon, Buffalo; vice-president, Dr. J. H. Higgins, Rockford; secretary, Dr. John J. Catlin, Buffalo; treasurer, Dr. C. L. Larsen, Buffalo; censor, Dr. E. Y. Chilton, Howard Lake; delegate, Dr. T. J. Catlin, Delano; alternate, Dr. E. P. Hawkins, Montrose.

The following papers were read and discussed: "Drugs and Their Uses," by the retiring president, Dr. T. J. Catlin, Delano; "Laryngeal Paralysis as a Complication of Hysteria, with Report of a Case," Dr. J. H. Higgins, Rockford; "The Microscope in Diagnosis," Dr. John J. Catlin, Buffalo.

JOHN J. CATLIN, M. D., Secretary.

SOUTHWESTERN MINNESOTA COUNTY MEDICAL SOCIETY

The Southwestern Minnesota Medical Society held its annual meeting at Worthington on the afternoon and evening of January 11th. The united profession of the town of Worthington

had provided a fine meeting place in the A. O. U. W. hall, and during the course of the evening tendered the attending physicians a banquet at the Worthington House. Twenty members of the society and eleven non-members from the district were present.

The following papers were read and discussed: "Fracture of the Clavicle," by Emil King, M. D.; "A Plea for More Rational Treatment of Diseases of the Upper Respiratory Tract," by H. D. Jenckes, M. D.; "Fracture of the Neck of the Femur, with Report of a Case," by M. Sullivan, M. D.; "Foreign Bodies in the Eyeball," by J. H. James, M. D.; "Hematuria, with Report of a Case," by A. H. Clark, M. D.; "The Radiograph in the Diagnosis of Diseases of the Bones and Joints, with Demonstration of Numerous Negatives," by invitation, by A. R. Colvin, M. D., of St. Paul.

The following officers were elected for this year: President, Dr. C. O. Wright; vice president, Dr. C. P. Nelson; secretary and treasurer, Dr. Emil King; delegate, Dr. M. Sullivan, alternate, Dr. A. J. Schultz. Luverne was selected as the next meeting-place.

EMIL KING, M. D., Secretary.

NEWS ITEMS

Dr. J. R. Nannestad has moved from Bricelyn to Albert Lea.

Dr. D. H. Bath has decided to locate permanently in Denbigh, S. D.

Dr. H. M. Egan, of Hetland, S. D., is taking a special course in Chicago.

Dr. W. L. Beebe, of St. Cloud, has resumed practice after a long illness.

Dr. W. T. Corry, of Hannah, N. D., is in Chicago taking a special course.

Dr. M. C. Johnston will resume his old practice at Hope, N. D., in the spring.

The Stearns County Society held its quarterly meeting on January 18th, at Melrose.

A \$10,000 addition to St. John's Hospital at Red Wing will be built in the spring.

Dr. A. C. Morris, of Fargo, N. D., has been spending a month in the Chicago hospitals.

Dr. F. W. Maercklin, of Ashley, N. D., is doing post-graduate work in the Chicago Polyclinic.

Dr. J. A. Ballou, of Lead, S. D., was married last month to Miss Elizabeth Barnett, of Rushville, Ill.

Dr. Martin M. Grove, of Dell Rapids, S. D., was married last month to Miss Grace Fisk, of Plain View, Minn.

Dr. A. N. Bessessen, of Minneapolis, announces that he will confine his practice to surgery and consultation work.

Dr. George J. Hanley has located at Thief River Falls, and entered into partnership with Dr. P. L. Vistauunet.

Dr. Rolf Meidell has returned to Aneta, N. D., after spending a year in special study in Europe, mainly in Berlin and Bergen.

Dr. C. W. Miller, of Virginia, has been given charge of contagious diseases in the unorganized townships of St. Louis county.

Dr. F. M. Rose, of Faribault, who has been very sick at St. Mary's Hospital, Rochester, for some time, is rapidly improving.

Dr. E. W. Bayley, of Sleepy Eye, has been appointed brigade surgeon of the Minnesota National Guard, with the rank of major.

Dr. D. Tuft, who has been doing post-graduate work in Germany for the past six months, has returned to his practice in Fargo, N. D.

Dr. J. S. Reynolds, State University, '05, who has been assistant physician at the Soldiers' Home, has begun practice at St. Peter.

Dr. D. M. Graham, who has built up a successful practice at Le Sueur, will move to St. Paul, in order to avoid the exposure demanded in country practice.

Dr. T. S. Kammerling, who has been practicing at Mitchell, S. D., has gone to Spencer, in the same state, and formed a partnership with Dr. John Lawver.

Dr. A. D. Hoidale, State University, '04, was married, the last of December, to Miss Pauline Madera, of Kansas City. Dr. Hoidale has located at Tracy.

Wisconsin will build a state tuberculosis hospital in Waukesha county. Two hundred acres of land have been bought at a cost of \$7,000 in the village of Wales.

Dr. J. H. Fouger, of Gary, S. D., is doing post-graduate work in Chicago, and during his absence Dr. L. B. Remick, a Hamline graduate, has charge of his practice.

The branch bacteriological laboratory at Duluth, under the supervision of the State Board of Health, will be enlarged to meet the demands of the mining and lumbering territory of that part of the state.

Dr. F. E. Walker, of Sioux Falls, S. D., has been appointed surgeon-in-chief to The Sisters' Hospital, of Hot Springs, S. D., and consulting surgeon to the government sanitarium at that place.

Dr. Edmund Backe, not Dr. *Edward*, as our types made it, is the president-elect of the Goodhue County Medical Society. And this shows the necessity for official information along these lines. Will not secretaries send us official reports?

At the annual meeting of the Washington County Society, held on January 9th, at Stillwater, the following officers were elected: President Dr. E. O'B. Freligh; vice-president, Dr. E. S. Boleyn; secretary and treasurer, Dr. F. G. Landeen.

The Sixth District Society of North Dakota, met last month at Bismarck, N. D. The following officers were elected for 1906: President, Dr. N. A. Ramstad; vice-president, Dr. V. J. La Rose; secretary and treasurer, Dr. C. L. Chambers.

The people of Hot Springs, S. D., are endeavoring to obtain for their city a branch of the Battle Creek Sanitarium, which the famous "health-food" institution talks of establishing in South Dakota, a state that is famous for its good cattle and good grain.

McLeod County Society met in annual session at Glencoe January 11th. The following are the officers-elect for the current year: President, Dr. P. E. Sheppard, Hutchinson; vice-president, Dr. J. B. Clement, Lester Prairie; secretary, Dr. P. E. James, Hutchinson.

At the annual meeting of the Black Hills District Society, held last month in Deadwood, the following were elected officers: President, Dr. C. W. Hargins, Hot Springs; vice-president, Dr. G. H. Coburn, Deadwood; secretary, Dr. F. E. Ashcroft, Deadwood; delegate, Dr. J. W. Freeman, Lead.

At the annual meeting of the Nicollet County Society, held at Le Sueur, January 9th, papers were read by Dr. J. W. Daniels, of St. Peter, and Dr. H. B. Aitkens, of Le Sueur Center. The following officers were elected for 1906: President, Dr. J. W. Daniels; secretary, Dr. J. E. LeClerc; treasurer, Dr. D. A. Kirk.

It is reported that Drs. Camp, Thabes and Batcheller, who were allowed only \$6 each for a post-mortem done for Brainerd, will carry the case to the supreme court to determine whether a doctor must work for the state for less than one-fourth what he charges an individual. It is time this question was settled.

The Blue Earth Valley Society met at Blue Earth January 2d, and elected the following offi-

cers: President, Dr. H. P. Johnson, Fairmont; vice-president, Dr. H. J. Forbes, Winnebago; secretary, Dr. J. A. Broberg, Blue Earth; treasurer, Dr. G. H. Leudtke, Fairmont; delegate, Dr. F. L. Durgin, Winnebago.

The Brown-Redwood County Society held its annual meeting at Sleepy Eye, January 9th. The officers elected for 1906 are as follows: President, Dr. O. C. Strickler, New Ulm; secretary-treasurer, Dr. W. A. Brand, Redwood Falls; treasurer, Dr. A. F. Strickler, Sleepy Eye; delegate, Dr. J. L. Adams, Morgan.

The Black Hills District Society, of South Dakota, held its annual meeting at Deadwood, S. D., last month, and elected the following officers: President, Dr. C. W. Hargins, Hot Springs; vice-president, Dr. G. H. Coburn, Deadwood; secretary, Dr. F. E. Ashcroft, Deadwood; treasurer, Dr. F. S. Howe, Deadwood; delegate, Dr. J. W. Freeman, Lead.

The "good" people of Redwood County are wondering what can be the meaning of an advertisement appearing in the Revere Record. To say the least it is a novelty. Here it is:

NO ABORTION

Do Not Ask It

DR. L. P. SOLSNES

Physician and Surgeon

Revere, Minn.

The Upper Mississippi Valley Society held its annual meeting in Brainerd on January 9th. An excellent program, a visit to the hospitals, and a banquet, with a good attendance, made the meeting worth while. The following are the officers elected for the current year: President, Dr. J. A. Thabes, Brainerd; vice-president, Dr. W. G. Cameron, Staples; secretary, Dr. C. F. Coulter, Wadena; treasurer, Dr. Paul E. Kenyon, Wadena.

The Aberdeen District Society of South Dakota met at Aberdeen, S. D., January 16th. Dr. Leo M. Crafts, of Minneapolis, read a paper on "Wear and Tear of the Nervous System." The annual election resulted as follows: President, Dr. John R. Thompson, Northville; vice-president, Dr. C. E. McCauley, Aberdeen; secretary, Dr. E. Jay Clemons, Aberdeen; treasurer, Dr. E. O. Miller, Aberdeen; delegate, Dr. F. M. Cain, Redfield.

The West Central Society met, in annual session, at Morris, on January 10th. Dr. Arthur Sweeney, of St. Paul, read a paper on Auto-intoxication; Dr. Hensel, of Alexandria, councilor for the first district, spoke on medical societies; and Drs. Leuty and Oliver presented clinical cases. The officers elected for the current year were as follows: President, Dr. B. M. Randall, Graceville; vice-president, Dr. M. L. Ransom, Hancock; secretary and treasurer, Dr. L. G. Gibbon, Lowry.

PRACTICE FOR SALE

A good opening in a village of 530 inhabitants, 30 miles from the Twin Cities, with the nearest physician twelve miles away. Practice will be turned over to the purchaser of my driving outfit, drugs, etc., for \$500. Reason of selling: I am going to the city to practice. Address "M," care of this journal.

PHYSICIAN WANTED

A Norwegian physician is wanted at Lankin, N. D., where the population is mostly Norwegian. For further information address B. B., care of this office.

PARTNER WANTED

I want a partner with \$1,000 or \$1,500 to help in establishing a hospital. I have a growing practice now paying between \$3,000 and \$4,000, but most of the profitable business goes to the Twin Cities, on account of lack of hospital facilities here. Partner must be a Norwegian and speak the language. A splendid opening for the right man. Address B., care of this journal.

PRACTICE FOR SALE

In a town of 350 in Southern Minnesota, mixed nationality. Practice established seven years; no competition; nearest town eight miles; country thickly settled. Practice goes to purchaser of my residence, new and modern, and cost \$1,600. One-third cash. Will introduce successor. Reason for selling, I am going to the city. This is a bargain. Address "E," care of this journal.

PHYSICIANS LICENSED AT THE JANUARY, 1906 EXAMINATION
TO PRACTICE IN MINNESOTA.

We publish this list in this form at the request of the State Board of Medical Examiners, in order that the names may be pasted in the Official Register, copies of which are sent free by the Board to anyone who applies for same and remits five cents to pay the postage.

Abbott, J. G. (R); Jefferson Med. Col., 1905; January 12, 1906..St. Paul, Minn.
Boeckman, Egil (R); Univ. of Penn., 1905; January 12, 1906....St. Paul, Minn.
Connelly, V. M. (R); Barnes Med. Col., 1902; October 13, 1905...Minneapolis.
Dupont, George, (R); Laval Univ., 1899; January 12, 1906..Minneapolis, Minn.
Dougherty, J. P. (R); Col. of P. & S., Chicago, 1904; January 12, 1906.Wabasha.
Dolder, F. C. (R); Northwestern Univ., 1903; January 12, 1906.....Hastings.
Eichmann, Johannes (R); U. of Leipzig, Germany, 1893; Jan. 12, 1906, St. Paul.
Gillespie, H. N. (R); Queen's Univ., Canada, 1896; Jan. 12, 1906..Elma, Iowa.
Hammerel, A. L. (R); Univ. of Minn., 1905; January 12, 1906..St. Paul, Minn.
Hoyt, J. E. (R); Northwestern, Chicago, 1905; January 12, 1906....St. Peter.
Jones, A. E. (R); Barnes Med. Col., 1905; January 12, 1906....St. Louis, Mo.
James, R. C. (R); Univ. of Minn., 1905; January 12, 1906..Minneapolis, Minn.
Kuhlmann, August (R); Univ. of Minn., 1905; January 12, 1906.Duluth, Minn.
Livingstone, J. W. (R); Univ. of Ill., 1905; January 12, 1906.....Wells.
MacMillan, A. E. (R); Queen's Univ., Canada, 1903; January 12, 1906.Soudan.
Moorhead, A. C. (H); Chicago Homeo. Med. Col., 1902; Jan. 12, 1906.Chicago.
Pozdena, O. R. (R); Columbia Univ., N. Y., 1905; January 12, 1906..St. Paul.
Pedicord, Harper (H); Southern Homeo. Med. Col., '99; Jan. 12, '06.Baltimore.
Richards, G. L. (R); Harvard Univ., 1886; January 12, 1906..Falls River, Mass.
Schaefer, Samuel (H); Univ. of Mich., 1904; January 12, 1906.....Wykoff.
Seeley, Laura I. (R); Hahnemann, Chicago, 1905; January 12, 1906...Faribault.
Stewart, O. E. (H); Hahnemann, Chicago, 1902; January 12, 1906....Bricelyn.
Sanderson, E. T. (E); Bennett Med. Col., 1905; January 12, 1906....Chicago.
Thompson, E. J. (R); Queen's Univ., Canada, 1901; January 12, 1906..St. Paul.
Will, W. W. (R); Univ. of Minn., 1905; January 12, 1906.....Minneapolis.
Wright, G. M. (R); Kentucky Sch. of Med., 1893; January 12, 1906.Minneapolis.
Wells, J. H. (R); Univ. of Iowa, 1902; January 12, 1906.....Genoa, Wis.
Welch, M. C. (E); Bennett Med. Col., 1902; January 12, 1906..St. Paul, Minn.
Walker, Horatio (R); McGill Univ., 1902; January 12, 1906....Duluth, Minn.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

VOL. XXVI

FEBRUARY 15, 1906

No.

RENAL INSUFFICIENCY FROM AUTOTOXIC STRAIN AS RELATED TO NEPHRITIS, AND ITS TREATMENT*

BY GEORGE F. BUTLER, M. D.

Professor of Medicine in the Chicago Post-Graduate Medical School

CHICAGO

The too prevalent conception of disease as a completely new factor in the organism, in place of the pathological fact that it is a great upset of the physiological balance previously existing, plays special havoc with diagnosis and therapy. This conception arises from the view that the organs, in place of being component parts of a compound animal,—each having its own nervous system, sensory, trophic, and motor, and all united and controlled for the benefit of the organism as a whole by the central nervous system,—are separate and distinct, and that their diseases are essentially local, while the constitutional effects accompanying them are a possible incident. In like manner as the universe is so governed by the correlation and conservation of forces that no force is ever lost, so is the body kept in order by correlation and conservation of function, a condition or balance, health being the result.

This system of correlation pre-eminently appears in the interrelations of the elimination states, the renal, hepatic, intestinal, dermal, and pulmonary, disturbance of any one of these throwing extra work on the others. In renal, hepatic, and intestinal disturbances, dermal and pulmonary overwork becomes evident in erythemas and asthma. Hepatic and intestinal insufficiency shows itself very often in renal disorder marked by casts and albumin. Disturbance of

the central nervous system shows itself, first, in too excessive action of the eliminatory organs from removals of inhibitions, and, secondly, in resultant nervous exhaustion of each. Each organ has for motor purposes the sympathetic or ganglionic centers, but the central nervous system controls any tendency to excess in this. The kidney, for example, has eighteen nerves, derived chiefly from the solar and aortic plexuses. These are controlled from the medulla. Puncture of the floor of the fourth ventricle, sudden mental shock, or anxiety increases micturition of pale nervous urine, indicating interference with elimination. Not only this, but the urine, if the kidneys be insufficient, will be excessively acid or show a high ammonia content, indicating imperfect oxidation. Occasionally, moreover, this pale urine will contain indican, indicating resorption of the products of intestinal putrefaction. The result of these two conditions, neither of which may be due to kidney defect or disease, will be to produce renal strain, causing, if too long sustained, a secondary renal disease. The true Bright's disease may result in this manner, because shock to the medulla is apt to affect the metabolism and the poison-destroying functions of the liver, as well as the general metabolism, thus leading to increased formation of toxin. The intestinal products which interfere with proper intestinal function, are absorbed and passed out

*Read before the Sioux Valley Medical Association, at Sioux City, Iowa, January 18, 1906.

through the kidneys. Two great indications of this condition are the appearance either of a low degree of acidity, indicating the imperfect elimination of these products, accompanied with the presence of indican-uria. These two conditions are frequently found associated and co-existent with conditions of renal strain shown in the presence, first, of cylindroids, and the hyalin casts, then possibly granular casts, and then albumin. If the casts be coarsely granular the condition has set up a secondary tubular change, and has become more than a renal irritation. While true Bright's is an expression of general constitutional vasomotor change, these temporary strains on the renal circulation and function may produce a general hematic state predisposing to it. The nerve strains have a tendency in this direction because they inhibit the eliminatory function of the liver, and inhibit proper oxidation, causing an undue percentage of acid formation. In this way toxins and autotoxic products are circulated in the system to irritate the arterial walls and to lead to arterial sclerosis and other changes, thus producing the essential condition for true Bright's. The liver, as Croftan and others have shown, plays a part, and a large one, in the production of uremia, evidently through loss of its poison-destroying function accompanied by an increase in the autolysis leading to excretion of excessive amounts of acid products and a consequent increase in the ammonia of the urine. The liver, it is not generally remembered, is practically two organs, acting embryologically and functionally. One of those functions is sanguificative, and the other poison-destroying. A balance between these two functions is necessary to avoid strain on the oxidizing organs. Not only the lungs, but all the organs of the body require oxygen. In conditions where there is imperfect supply of oxygen to the tissues, as in states of mental depression and in conditions of physical imperfection and autotoxemia, like diabetes and nephritis, the phenomenon called "air-hunger" manifests itself. This phenomenon is simply a desire of the tissues for oxygen, a desire indicating likewise an imperfect supply of water in a shape for metabolic purposes.

Besides the water needed for elimination, through the lungs, throat, mucous membranes generally, liver, and kidneys, there is needed an enormous quantity for tissue metabolism. If this supply be not sufficient the tissues are going to suffer for the benefit of the eliminatory organs, but the supply of water from the tissue will be not only insufficient, but likewise impure, containing metabolic products which strain on the eliminating organs. Furthermore, under many conditions, where stimulus is given to water-excretion at the expense of other products, one eliminatory organ will suffer, because of the undue removal

of water by another. In most nervous conditions the liver and intestines suffer for the benefit of the kidneys, which, in consequence, are overstrained, partly through their imperfect powers of elimination and partly through the resorption of intestinal and other products of renal elimination.

It was the recognition of renal states secondary to conditions just described, that led to the efficient use of hydrogogue cathartics in cases where there was not marked hydremia evidenced by anasarca and ascites.

The therapeutic indications of the states just described are clear. In the first place the problem is to avoid undue strain on the poison-destroying function of the liver, secondly, to increase its oxidizing powers, and, thirdly, to stimulate removal by the kidneys of other substances than mere water through removal of strain by indican and allied products.

The first suggestion that occurs in these cases is that of relief by dietetics. Now, the excessive amount of starchy food—potatoes, cabbage, parsnips, carrots, and allied vegetables—results in the formation of bulky material in the intestine which ferments and is absorbed, along with the products of abnormal proteid digestion, and passes out through the kidneys. This is the reason in conditions like tuberculosis, where there is a tendency to renal insufficiency, that starchy foods work such damage. Reduction of starchy foods in these cases is, therefore, the first necessity. Reduction likewise of the proteids, as found in meats, is also a necessity. The frequent instances where hemiplegias and aphasia have resulted from the ingestion of meats in renal cases after long abstinence, indicate the danger of meats in excess. For the same reason that starchy foods are objectionable because of their profuse intestinal accumulation, foods like radishes and pine-apples, which contain much woody fibre, are also objectionable. The same is equally true of berries with their seeds. Avoidance of improper intestinal fermentation can be secured through the use of intestinal antiseptics, such as the sulpho-carbolates or other equally good intestinal antiseptics. The following prescription has been recommended by Kiernan:

℞
 Creosote, 60 gr.
 Pancreatin, 60 gr.
 Oil of Birch, 60 gr.
 Ox-gall, 60 gr.
 Ext. colocynth comp. 60 gr.
 Eserin nitrate, ½ gr.

M. S.—Divide into a mass, make into 120 capsules and mark S. One thrice daily after meals and one on retiring.

It is also desirable where there is a tendency to excessive elimination of watery urine to trans-

fer the water elimination from the kidneys to the intestine and liver and this can be done by a combination of hepatic stimulants and hydrogogue cathartics. The following will be found to work excellently:

R

Sp. Tr. chionanthus	I dram
Sp. Tr. apocynum cannab.	I dram
Sp. Tr. leptandria	I dram
Sp. Tr. podophyllum	I dram
Sp. Tr. iris	I dram
Sp. Tr. asclepias	I dram
Compound licorice powder sufficient.	

M. S.—Make 120 capsules, and order one on retiring and on rising and, if need be, at 3 o'clock in the afternoon. I have also found Abbott's Saline Laxative of value in these cases.

In many of these cases there is a chlorohydremic condition which needs attention and which

requires the use of a tonic diuretic. The best is the Basham's mixture of the pharmacopea, otherwise, liquor ammonii et ferri acetatis. This should be given in two teaspoonful doses pretty freely in cases where there is the slightest appearance of the anemic condition due to renal and hepatic disturbance.

Fats should be given so as not to disturb the digestion. Large quantities of olive oil could be taken with considerable advantage. In the event that the acid condition shows in a lower degree of acidity, or in an increased ammonia excretion, as in neuralgias or so-called rheumatism, sodium bicarbonate, in 60 grain doses daily, will exhibit the same markedly beneficial effects that it does in the acidotic states of diabetes.

If dyspnea or asthmatic states make their appearance, marked benefit will result from the internal use of quebracho, rosin weed, and jambul.

THE STATE BOARD OF MEDICAL EXAMINERS—A CRITICISM*

BY ARTHUR SWEENEY, M. D.

ST. PAUL

A medical law which is framed on just lines, and is enforced, is a boon to the people of the state. It protects the physician in the just exercise of his rights, and shields the public from both the impositions of the unscrupulous and the mistakes of ignorant physicians. It possesses a double function. When one of them is exercised to the suppression of the other, the law may be a boon neither to the physician nor to the public. If the public is protected by law from the dangers consequent upon ignorance, while at the same time knavery and quackery are allowed to prey upon it, the public is not safeguarded, and an unjust burden is put upon the physician. It says to the physician: "If you are ignorant or unskilled we will punish you to the full extent of the law; but if you are not only ignorant and unskilled, but also without conscience, a cheat, a fraud, and a swindler, you will be allowed to carry on your nefarious practices without interference."

Medical laws are designed for the purpose of testing the fitness to practice of persons holding themselves out as healers of the sick. The laws were not passed in response to spontaneous public demand. They were put upon the statute books through the influence of the wisest and best of those physicians who realized the necessity of protecting from ignorance and quackery the lives

and the health of the people. They were designed to purify the practice of medicine, to elevate the standard educational requirements to practice, and to guard the health of the community from the perils of incompetency. There is no dispute that medical laws are necessary. But it is not sufficient that they stand as an idle menace on the statute books. There is no automatic machinery in police regulations which will enforce them. It is only by the vigilant activity of some one that such laws are enforced. The game laws do not become rusty; the barbers, plumbers, and horseshoers do not sit idly by and say that the public can enforce the law if it will.

It is some one's duty to see that the medical law is enforced. Let us see upon whom this duty devolves. The title of the medical practice act reads 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." The law provides for a board to examine and license physicians, and to punish violators of the act. By what jugglery of construction can the Board set up that its duty is limited to one of the purposes of the act, and that it has nothing to do with the other and equally important provision? Can it be said that the law in constraint of burglary and prescribing the penalty therefor, means that policemen shall prevent burglary, and that if the crime is com-

*Read before the Minnesota State Medical Association, June 1, 1905.

mitted the public can then inaugurate the pursuit and punishment of the guilty parties? It is true that all citizens have an interest in preventing violation of the laws, but upon them devolves no special initiative. There are many reasons why physicians are delicate, perhaps culpably delicate, in enforcing the medical law against a professional rival, but there is no reason for this bashfulness on the part of an impersonal board. Energy, enthusiasm, and a proper appreciation of the present unpleasant situation, are needed on the part of the Board.

What is the present situation? It is hardly necessary to paint the picture of the present state of affairs. It is too apparent to need description. The larger cities are full of quacks, and itinerant charlatans roam the country districts. Unlicensed and audacious advertisers settle in a city, milk the public until dry, and go to other towns to repeat their nefarious practices. Abortionists advertise boldly in the newspapers. Cancer specialist apply their arsenical pastes with absolute impunity. Manufacturers of wonder-working medicines guarantee cures, and prescribe their physics unpunished. When some scoundrel is arrested and fined for treating diphtheria as tonsillitis, or for producing abortion, it is seldom at the initiative of the medical board, but at the instigation of the health officers or the police.

Why is such immunity granted to these offenders? Because the law is defective? It is not, as we know, a perfect law. There are some changes in the definition of the practice of medicine that are much desired. But it is a good enough law, or at least one that is not wholly useless, that can secure the indictment of Aarons, of Duluth, in 1902; of Wann, of Minneapolis, in the same year; of Harmon, of Jeffers, in 1904; and the indictment and conviction of Oredson, of St. James, and of Herbert, of Black Duck, in 1904. The defect in the law is not hopeless when prosecutions and indictments can be secured under it, as well as 40 per cent of convictions. The law is possibly defective in its provisions for the punishment of osteopaths, chiropractics, and other manipulators, for the statute, as construed by the supreme court, holds that the expression "other agencies" must be considered as meaning other agencies similar to drugs and medicines. Granted that one supreme court made this ruling, it is not necessarily infallible. Courts have been known to reverse themselves. One set of judges do not always decide as a previous set has done. No other test case has been brought. It is possible that another court, ruling upon the facts of another case, might reverse this opinion, and, basing their judgment upon the spirit rather than the letter of the law, follow the broad lines laid down in the Alabama decision. Whatever defects

there are in the law, it is not on record that the State Board of Medical Examiners has made any recommendations to the legislature or to the State Society suggesting the lines upon which a better and more practical law could be framed. Is it not possible that the Board is too easily discouraged by its reverses?

Let us analyze the work done by the Board since 1900, as gleaned by a report made to me by the secretary:

Complaints to Board	1900-1	1902	1903	1904	1905	Total.
Claims not to be practicing	6	1	2	4	0	13
Left the state	9	3	6	2	0	20
Discontinued practicing	6	10	11	9	4	40
Magnetic healers	2	1	3	1	0	7
Osteopaths	1	0	1	1	0	3
Chiropractors	1	0	0	1	0	2
Total complaints	25	15	23	18	4	85
Complaints pending	0	0	0	0	5	5
Held to the grand jury	1	0	1	0	0	2
Bail forfeited	1	0	0	1	0	2
Indicted, prosecution failed	2	0	0	0	0	2
Indicted, not prosecuted	2	0	0	1	0	3
Indicted, prosecution successful...	0	0	0	2	0	2
Total	6	0	1	4	5	11

The average number of complaints during the past five years is 18; the average number of legal prosecutions for the same period is 2. There have been no licenses revoked. The system employed by the secretary, on receipt of complaint that a doctor is practicing illegally, is to write a letter requesting him to comply with the law. If he fails to do so after proper notice, it is the duty of the secretary to prosecute him.

The financial statement for the past five years follows, certain minor details not being included:

	1900	1901	1902	1903	1904
Total receipts	\$2,181	\$2,090	\$2,455	\$2,380	\$2,295
Paid to members	710	957	1,057	1,104	1,022
Paid for prosecutions	504	270	65	164	109
Stenographer	80	150	180	0	0
Secretary's salary	150	150	150	532	550
Midwifery fees	111	129	132	0	0
General expenses	245	396	208	353	487

Analysis of this statement shows a marked diminution of the portion of the funds spent for legal prosecution of offenders of recent years, and a general disproportion in the amounts spent for prosecutions of the general receipts of the board. In 1900 about 23 per cent was so directed; in 1901, 13 per cent; in 1902, 2.6 per cent; in 1903, 7 per cent; and in 1904, 9 per cent. These figures show, perhaps as well as any, how energetic the Board has been in the prosecution of offenders. In 1899 eleven legal processes were begun, in 1900 ten were inaugurated, and in the succeeding four years only twelve were started. If there were a better showing in this direction, less criticism would be merited.

It will hardly be considered to be energetic enforcement of the law when, on an average, eighteen complaints of illegal practicing are each

year attended to by the peaceful method of writing letters to offenders, especially when 30 per cent of these complaints are not well founded; nor will it be esteemed a vigorous enforcement of the law when legal prosecutions are begun against two offenders a year, while the cities are full of notorious violators of the law. The Board has, perhaps, shown commendable activity so far as it has gone, but its energy has not been adequate to the situation. It has not been vigorous in stamping out flagrant and notorious quackery. Every one of the large advertising concerns is conducted by a physician who is either licensed or unlicensed. If the former is the case, their licenses should have been revoked; if they were unlicensed, a little enthusiasm and energy would have led to indictment and prosecution. It is not sufficient to say that prosecution for illegal practicing is not always successful. The same is true of other misdemeanors and crimes. But it is true that an active stirring up of quacks teaches them that practice in this state is not a bed of roses, and that they cannot hope to carry on their nefarious schemes in perfect security. It is well known that those states whose medical laws are enforced with the greatest persistency and determination are avoided by charlatans.

The fault, however, is not entirely with the Board. There has been universal lukewarmness on the part of the profession. Is it not significant that, with the present situation, less than twenty complaints per year have been made to the secretary of the Board? It is not true that this number represents even a small portion of the illegal practitioners in this state. If the physicians were awake to the necessities of the hour, would there not be a commendable curiosity as to the standing of the doctors who come into their neighborhoods? Would not the secretary's office be full of inquiries as to the legal status of the men who locate in various parts of the country, and would it not be easier for the Board to keep in touch with the offenders who travel from one town to another? While it is the duty of the Board to enforce the law, it cannot be expected that, without information, it can, by a process of mind-reading or telepathy, know who is and who is not illegally practicing. In other words, do we, as a profession, keep the Board up to its duty, and do we give to it the information and assistance which it needs? It will not do to shift even a portion of the responsibility which belongs to us upon an impersonal board. In the last analysis the responsibility for the enforcement of the law falls upon us as a profession. We have established and created the Board, and it will not do for us to say that it can go its way without further encouragement and assistance from us.

What is needed is greater co-operation between the Board and the profession. There has hitherto been no connection or affiliation between the State Society and the Board. They have been as two planets roaming different orbits. The Board makes no report to the State Society, and the Society asks no questions of the Board. Even in the selection of members of the Board, the Society makes no recommendations to the governor, who must perforce rely upon the recommendations of political friends of the candidates, or upon the solicitations of the candidates themselves. The State Society is composed of county societies, which are the representatives of the profession in the various parts of the state, and it seems to me to be wise for the State Society to take up the enforcement of the law through the county societies. If it could be arranged that the secretaries of the county societies should be made the censors of the physicians living in the counties, it would be possible for the examining board to be brought into closer touch with delinquents, and to more effectively follow the movements of the migrating quacks. The indisposition on the part of individuals to make complaint to the Board against parties who invade their field of practice would thus be obviated, the secretary of the county society being empowered to act in his official rather than in his individual capacity. Charges of jealousy, envy, and malice would not lie against the officer of a society as they would against an individual. A physician whose neighbor is unlicensed would not be obliged to make complaint to the secretary of the examining board, but could write a note of inquiry to the secretary of his county society regarding the status of the invading charlatan, and thus bring the matter indirectly to the notice of the Board.

Some such scheme seems to be indispensable if the dormant condition on the part of the Board and of the physicians of the state is to be supplanted by active and vigorous enforcement of the medical law. By such a union of forces the physicians would be able to do their full duty, and the Board would be the beneficent institution it ought to be. There has been too little co-operation between the State Society and the Board. A closer union in this direction would not only free the Board from the criticism of inactivity, but would, by bringing it more closely in touch with the physicians of the state, work the greatest good to the profession, and realize all the purposes intended by those who placed the law on the statute books.

DISCUSSION

DR. WM. DAVIS (St. Paul): Dr. Sweeney's paper strikes a popular chord. We all know that the state is full of quacks and irregulars, and, following the natural impulse to blame some one, the Board of Medical Examiners is the easiest target to fire

at. I do not propose to apologize for the conduct of the Board, and I pass by Dr. Sweeney's obvious misstatement that the law, either directly or by implication, makes it the duty of the Board to prosecute unlicensed practitioners. The law says, "It shall be the duty of the respective county attorneys to prosecute violations of this act." The point is of little consequence except as a matter of fact, because the Board is willing and ready to instigate prosecutions without any mandate from the law. I must, however, comment on Dr. Sweeney's criticism, that the Board makes no report to this Association. Why should it? The Board does not emanate from this Association; indeed, I believe I am the only member of the Board whose appointment was recommended by you. During the last three years but five of the nine members of the Board have been members of this Association, there can never be more than six, and as the membership of the Board depends upon the caprice of the governor of the state, we may see a Board that does not contain a single member of this Association. Would it not be arrogance on our part to claim a position of proprietorship or censorship over the Board whose three homeopathic members might justly think that they and their State Institute should have some voice in the matter?

The reason why the Board is indisposed to instigate prosecutions at the present time is best shown by reading a letter written to the Board in April, 1904, by its attorney Mr. A. B. Darelius, who for several years had been employed by the Board, and had undertaken a number of prosecutions in its behalf. The letter follows:

Minneapolis, April 21, 1904.

Dr. C. J. Ringnell, Secretary,

Dear Sir:—Permit me to herewith enclose bill for services rendered since my last report and trust same will meet the approval of yourself and the Board. I deem it necessary to make some explanation in reference thereto and will make some suggestions and crave your pardon if I should seem to be a little prolix. It might seem to you and the members of the Board that to simply write letters and not start prosecutions against these parties who are continually practicing without a license, on account of which your Board is more or less annoyed by complaints from different quarters, brings no results, yet it is about the only thing that can be done, and in individual cases a strong letter has had the desired result.

While I am perfectly willing to start prosecution against any one practicing without a license, upon order from your Board, I cannot help to say that the results usually attained hardly warrant the expenses incurred. Take for an instance this case of Dr. Harmon against whom I filed a complaint about a year ago. When he appeared before the justice of peace at Jeffers, he simply waived examination, and gave a bond to appear before the district court of Windom last fall; and that was all there was to it. When the matter came to be considered by the grand jury at Windom, that body, as I rather expected, considered the matter of trifling nature and, as is usually the case, refused to indict Dr. Harmon. One of the reasons assigned, as is shown by the county attorney's letter to me on Feb. 22, was that the prosecution was simply instigated through spite or professional jealousy.

The machinery to secure a conviction is so cumbersome, and the several county attorneys are so reluctant to take hold of these cases in earnest that it is next to impossible to secure a conviction.

you can by writing strong letters and threatening prosecutions until the time comes for our next legislature to convene, when your Board, in my opinion, should make a determined effort to secure the adoption of a law that would be simple and at the same time comprehensive enough to give the Board the power and authority to prosecute these cases before the several justices of peace. As the law now stands a justice of peace has no jurisdiction, and all he can do is to bind the man over to the grand jury. If the justices of the peace had jurisdiction, I have not the slightest doubt but what effective action could be taken to stop these continual violations.

As I said before, I shall be glad to institute prosecutions at any time, yet it seems to me like throwing good money after bad, and, personally, would rather see the Board save this money and use it in securing the services of someone to look after the interests of the Board at the coming session of our legislature. In the meantime all we can do is to do the best we can to assure the profession that the failure to convict unlicensed practitioners is not due to inactivity on the part of the Board, but to the insufficiency of the present law in the premises.

Yours respectfully,

A. B. DARELIUS.

Is it a wonder that the Board, after receiving this letter from its attorney, should become rather lukewarm on the subject of prosecutions and should decline to ask its Secretary to give his time to working up hopeless suits? The attorney's advice was given contrary to his own interests, and it is hardly surprising that the Board prefers to follow the advice of its attorney rather than the advice of Dr. Sweeney in legal matters. The suggestion that the Board should appeal to the supreme court on the question of the definition of the practice of medicine is rather a surprise coming from Dr. Sweeney. The professor of medical jurisprudence in the State University ought to know that these being criminal cases, the Board, representing the prosecution, has no right of appeal. Dr. Brimhall, when secretary of the Board, tried to get around this by recourse to a friendly suit, but found it impracticable. If Dr. Sweeney will point out the exact way to get this point before the supreme court, it will gratify the Board and surprise the attorneys.

Is there a remedy for this bad state of affairs? There is, and, I am glad to say, the remedy is in sight. Although Dr. Sweeney reproaches the Board for doing nothing to secure better legislation, as a matter of fact, the only thing that has been accomplished toward improving the present wretched law, was when a member of the Board went before the committee on revision of the statutes last summer and secured a rewriting of the medical practice act that does away with the permission to practice by affidavit, that provides for reciprocity, that makes several minor changes, and, best of all, secures the improvement urged by Mr. Darelius, allowing prosecutions to be brought before municipal courts and justices of the peace. The definition of the practice of medicine was also changed as recommended by Dr. Sweeney, but some enemy of the public and of the profession got hold of the revision in a senate committee and put back the old definition.

The profession is to be congratulated that it can look forward to having a law that can be much better enforced against the quacks when the revised statutes come into force next March.

DR. BURNSIDE FOSTER (St. Paul): I am very glad that Dr. Sweeney has brought this matter before the Association, because it seems to me the conduct of our State Board of Medical Examiners in the enforcement of our medical laws is a subject in which we all ought to feel much interest. It seems to be admitted in Dr. Sweeney's paper and in Dr. Davis' discussion that the law is not enforced. It would then seem to be a fair question to ask, Why is it not enforced? What is the object of the medical law, and what is the object of the State Board of Medical Examiners? What are their duties? Their duties are to examine those candidates who apply to them for license to practice medicine. They do that very thoroughly; they rub it in as hard as they can. For young men and women who have already passed examinations and are presumably qualified, they make it as difficult as possible to obtain a license to practice medicine in this state. That is one of their duties, and they perform it very thoroughly. Another duty, at least by implication, is to prosecute illegal practitioners or bring about prosecutions. Of course, it is the duty of the county attorney, as Dr. Davis says, to bring the prosecution, but it would seem to be the duty of the Secretary of the State Board to assist the county attorney to bring such prosecution, and to push the prosecution of every violator of the law. The county attorney must bring these prosecutions, and if he declines to bring them it would be an easy matter to impeach him.

Dr. Sweeney has suggested two very excellent remedies which would improve the present conditions. One remedy is this, a closer association between the State Board of Medical Examiners and the State Medical Association, and it is an excellent suggestion. A good many men in the country districts refuse to make complaint against men whom they know to be illegal practitioners, because their motives would be ascribed to professional jealousy, but if the secretaries of the county medical societies had it as a part of their duties to keep a sort of censorship over medical men in their respective localities and report infringements of the law, I believe that would bring to the attention of the Board many cases of violation that now escape.

Another matter which Dr. Sweeney suggested, and which Dr. Davis commented upon, is as to the interpretation by the supreme court of the definition of the "practice of medicine." In their wisdom the legislature has conferred upon the osteopaths the right to practice, but by the same act has declared that the business they are engaged in is not the practice of medicine. I would like to know whether in the opinion of the supreme court of Minnesota, osteopathy is or is not the practice of medicine.

I believe that it might be possible to get a decision on this point from our supreme court, and that decision would be very interesting reading to many of us. The mere fact that the legislature has declared that osteopathy is not the practice of medicine seems to me absurd as if the legislature had declared that trying cases in the district court is not the practice of law. In spite of the advice of the attorney of the State Board, I believe that convictions of those practicing medicine without a license may be occasionally obtained, if proper efforts to do so are made, and even where such prosecutions fail, I am certain that many times such persons will leave the state rather than face another trial.

I am not in sympathy with the present policy of inactivity and I should like to see the Board make more strenuous efforts to drive out some of the

many quacks, who at present infest the state of Minnesota. Another excellent suggestion made by Dr. Sweeney was that this Association should recommend to the Governor those whom it thought most fitted to serve on the State Board of Medical Examiners. I am convinced that such recommendations would often have great weight.

DR. O. E. LINJER (Minneapolis): As I have only recently been appointed a member of the State Board of Medical Examiners I have not had time to look this matter up, but I had occasion to look up the records to see how many prosecutions inaugurated during the life of the Board have been successful; that is, of all parties prosecuted, how many have been convicted. I found, in looking over the records of the secretary, just a single case of conviction, and that was about a year ago. The man was prosecuted and convicted. He was afterwards granted a license by the Board upon satisfactory examination. This includes the period from the time the Board came into existence up to the present time.

I have prosecuted five or six men in this state for practicing medicine without a license. I took my own time, and used my own money. I had one man prosecuted, and he was convicted and sentenced to fifty days in jail or a fine of fifty dollars. He took fifty days in jail, and he was sent to jail without commitment by the sheriff, and the next day he walked out of jail by writ of habeas corpus. In another case I prosecuted, the man pleaded guilty to practicing medicine without a license, but the case was sent to the jury, who promptly disagreed with him.

This has been my experience in prosecuting people for practicing medicine illegally in the state of Minnesota. I am sorry it is such, but what are you going to do about it? When the legislature meets, you may go around to the medical men, and talk to them and say you want some better laws, and they will say, "We don't want to have anything to do with politics." If you ask them for anything else in the way of helping the profession they will simply do nothing.

The osteopathic bill passed two years ago, and what did the medical profession of the state of Minnesota do to prevent it? Nothing. The chiropractic bill was passed by the last legislature, and came up to the governor for signature. What did the medical profession of the state of Minnesota do to prevent the passage of that bill? Nothing, absolutely nothing. When it came to the governor for signature, as the governor told me personally, there had been but three or four medical men protesting against the passage of the bill.

I am not here as an apologist for the present Board, or its present secretary; the quality and quantity of their work, I think, on fair and unbiased investigation will compare favorably with that of any of their predecessors.

The present law is defective in many ways. Prosecutions under it are cumbersome, difficult, and unsatisfactory. It is sincerely to be hoped that the new law which goes into effect March 1, 1906 will prove more effective.

DR. J. B. MCGAUGHEY (Winona): Lest the impression should go out from the statement of the last speaker that the medical profession attempted nothing, in opposition to the osteopath bill which would very naturally be inferred from his remarks, although he does not say so in so many words, I wish to say that many of us can remember the time when Doctors W. J. Mayo, Witherstine, Sweeney, and a number of others had a meeting with the

senate committee in regard to that bill. I admit there were no results, but the medical profession made an effort to kill the bill.

DR. HALDOR SNEVE (St. Paul): The State of Minnesota and the profession have reason to be proud of the medical laws we have had. These laws have raised the standard of medical education in the United States by first adopting a state law requiring the examination before an examining board and requiring medical study in a reputable school for three years. I think the time has come when the profession should cease to lower its dignity by going to the legislature to ask the people to pass laws to protect themselves. Why does not the State Board secure conviction? Because public sentiment does not support our medical law—that is why. It looks to the public as though the doctors were chasing around to secure the conviction of some poor fellow who does not comply with the law,—who has not taken out a license,—and doing so for the same reasons that would actuate members of a trades-union. We cannot work a hardship on the quacks by the law. The only hardship we can work is to the young men and women who have worked hard for three or four years, in order to pass the State Board examinations. I believe the time has come to abolish the State Board of Medical Examiners. We must have some means by which a reputable physician can be singled out from the quacks, but I do not think we can do it with the present law. When we want to get a shave we have to go to a barber who has passed an examination and has a license; if we want to buy a pair of glasses we have to go to a man who has passed the Board of Optometricians; if we want to get a horse shod we must go to a blacksmith who has taken out a license from a state board. These boards have made our medical board a thing of ridicule, something to be laughed and jeered at. I think we ought to wipe out the whole outfit. I think the dignified thing to do is to do away with the law until the people want a law. The laws are not made to protect us, but to protect the people, and when the people will not support the laws that were made by the legislature for their protection, let us wipe the laws out, and let us take a dignified stand, and not lobby as though we were trying to protect our pockets by keeping out competition. The osteopaths were not allowed to sneak in under our protection, with our stamp on them as doctors, but they were forced to paddle their own canoe and have their own board, and the chiropractics were kept out all together.

I hope that the Minnesota State Medical Society will pass a resolution commending Gov. Johnson for his courage in vetoing the chiropractic bill. You ask me, "Shall we not combat quackery and knavery and shall we allow our state to be overrun with blood suckers?" I answer no, but I say we must alter our methods, and I repeat that our present methods are worse than useless. (Applause.)

DR. ARTHUR SWEENEY (Essayist): I am very happy, indeed, that I wrote the paper, for I think every speaker has shown the necessity that justified me in stirring up this Board. I was not in favor of Dr. Sneve's suggestion that the Board be abolished until I heard Dr. Linjer, but when I heard that the Board has succeeded in successfully prosecuting only one man, I think we had better abolish the Board, and substitute Dr. Linjer who has prosecuted more. (Laughter.)

According to statistics, furnished me by the secretary of the Board himself, there have been two successful prosecutions in the last two years, not one

as Dr. Linjer says. I want to say that during my brief personal tenure of office as secretary in the early days of the Board, I prosecuted even more than Dr. Linjer says he prosecuted, and I prosecuted them successfully; and I think at that time there was a general clearing out of quacks in the state. As Dr. Davis says, nothing has been done. Dr. Davis presumably speaks for the Board, being a member of it, and he admits that the Board does not prosecute, giving as a reason the letter written by a lawyer who says there is no use in prosecuting. Taking the record of this lawyer himself, during the last four or five years there have been five indictments and two convictions, or forty per cent of successful prosecutions out of all they attempted, and yet after he convicted two out of the five he says he cannot successfully prosecute under this law. He does not appreciate efficiency of the law well enough, if it can be enforced, according to the records of his office, as it has been.

Regarding the definition of the term "practice of medicine," Dr. Davis wishes to know some method by which the supreme court can rule upon that point. I do not know of any other way than to institute a prosecution, and if a conviction is secured the case would probably go to the supreme court where the point would probably be decided. So long as the Board adopts a *laissez faire* policy, and say they will not prosecute, it will never get to the supreme court.

The osteopaths, chiropractics, and others have gotten a foothold here: they have been allowed to establish themselves without let or hindrance, and there has never been any active opposition to any quackery that has attempted to come in here.

The whole subject matter is disgusting to me. We have a Board that inflicts a heavy penalty upon every educated physician. Any student who goes through any university or through any school has to pass another rigid examination conducted by the Board, but any quack can come in here, and the secretary of the Board will write him a letter, and the attorney will back him up in his violation of the law. I do not blame Dr. Sneve for saying the Board ought to be abolished. It is something we hear many times, that the Board inflicts a penalty upon those who ought to have a right to practice, and does not upon those who ought not to practice. That feature has often been unfavorably commented upon in my presence. Let us have a Board that will do its duty,—one that will not sneak behind the technicalities of the law, and one that will secure lawyers who dare to prosecute when the very records of the office show it can be done and that the law can be enforced. Let us have a Board that is energetic, enthusiastic, and that knows what it is about. (Applause.)

RECIPROCITY

Reciprocity has been established between Minnesota and the following states: Illinois, Iowa, Kansas, Michigan, Maine, Maryland, Missouri, Nevada, New Jersey, Nebraska, Ohio, South Carolina, South Dakota, Wisconsin, and Wyoming.

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SOME CONSIDERATIONS ON EYE-STRAIN AND THE NEUROLOGISTS*

BY EDWARD J. BROWN, M. D.

MINNEAPOLIS

My old friend and teacher, Dr. Herman Knapp, once remarked to his students that ophthalmology and neurology were so closely related that they should be associated in one specialty. The fairly intelligent specialist in either of these lines of work ought certainly to appreciate the importance of the ground common to both, whether he makes it all his own or not. I have been led to believe that this is more generally true of ophthalmologists than of neurologists. If the ophthalmologist sometimes makes the mistake of ascribing undue importance to low degrees of astigmatism or heterophoria in cases which prove to be the subjects of some systemic vice, far oftener does the neurologist overlook the conditions of eye-strain, refractive or muscular, which underlie a large proportion of the neurasthenias that they are called to care for. If the ophthalmologist makes such a mistake occasionally he can at least defend his practice by the claim that he is dealing with a definite fact of abnormality which can be determined and measured both subjectively and objectively, while the neurologist, on the contrary, is too often treating mere symptoms which may as reasonably be ascribed to eye-strain as to the more or less mythical lithemic or other systemic conditions. In other words, the obvious and demonstrable abnormalities are fully as legitimate points of attack as the ultrachemical, ultramicroscopic, and more or less questionable conditions which seem to have too exclusively interested some of our neurologists. It is not so strange, perhaps, that a mere specialist who calls himself a neurologist, should overlook some of the facts that seem very important to some ophthalmologists, since even distinguished ophthalmologists have been known to sneer at the idea that low degrees of astigmatism, sometimes called "physiological," can have any particular importance. I have even known a distinguished ophthalmic surgeon to question the importance of quarter diopter astigmatism, and then stultify himself by prescribing quarter diopter spheres.

But we all have the impression that the neurologist is, *par excellence*, the cream of specialists, and we cannot forget that it was Weir Mitchell, the neurologist, who, among the first, became aware of the transcendent importance of astigmatism as a cause of neural disturbances, and

urged that fact upon the attention of the ophthalmologists. Ophthalmic surgeons, engrossed with the consideration of the more obvious and more easily determinable objective diseases of the eye, and either too busy or too indifferent to work out the more difficult problems of refraction and muscular imbalance, may perhaps be excused for their shortcomings, but the neurologists, never. We have a right to expect better things of them. No members of the profession have more zealously and more honestly studied the more difficult problems of refraction and muscular imbalance than George T. Stevens and George M. Gould, and no two men have been more shamefully and unjustly traduced. Fortunately, they have been abundantly able to take care of themselves, and are in no need of my championing their cause. I am no blind partisan of either, but, while recognizing the possibly undue prominence given to certain views, I wish to register my admiration for them both, and to present a few cases which may serve to emphasize the value of their work and to direct the attention of the profession more especially to their writings, more systematic and more extensive than my materials or ability would permit.

When, in the winter of 188-9, the neurologists were investigating the claims of Dr. Stevens regarding the relationship of eye-strain and such neuroses as chorea and epilepsy, I was impressed with the hostility and apparent unfairness of the opposing forces, and during all the years that have since elapsed the impression has grown that the great body of eminent neurologists and ophthalmologists are hopelessly incapable of meeting and investigating such questions judicially and fairly. The negative evidence of a thousand of these men does not offset one carefully investigated case reported by such an observer as Stevens or Gould.

In a recent paper, C. L. Dana concludes that there is no evidence of a psychosis caused by eye-strain in an individual not otherwise the subject of nervous disease. The old quaker thought himself and wife the only sane people on earth, and admitted that he had some doubt about his wife. Unfortunate, entire sanity is a very difficult thing to prove.

Mr. A., a well-educated and successful profes-

*Read before the Minnesota State Medical Association, June 1, 1905.

sional man, gave me the following history: He had no trouble with his eyes till his later school years, but he was much puzzled in his early boyhood by the fact that reading for any length of time was accompanied by an unaccountable numbness of his fingers. He was of more than ordinary strength and vigor, with negative family history and with apparently everything favoring a happy boyhood, and yet he had frequent attacks of the "blues." These unaccountable symptoms promptly disappeared with the correction of one diopter of astigmatism. Dana remarks that "glassing is enormously overdone, and has become, in a way, a real psychosis." The statement has as much truth in it as many other utterly foolish and unscientific statements of able men. It is not so strange, however, that such a statement should emanate from a city where the eminent ophthalmologists have been so largely in accord in thinking they could properly refract their cases by estimates based upon ophthalmoscopic and ophthalmometric readings. Such glassing is largely overdone wherever it prevails, but no individual, young or old, who is much occupied with near work, can fail to receive benefit from the accurate correction of even those quarter degree astigmatisms, which some very wise men affect to disregard as physiological.

Mr. B., 42 years old, shoe-cutter, came to me on the recommendation of another patient, complaining of very severe pain, usually every Sunday, but sometimes on Saturday, on the right side of the midline at the back of the head and sometimes over the right eye. He has suffered in this way for six or seven years, has been treated all these years by various physicians, the last two years by three of my distinguished neighbors, two of them neurologists, and none of them has ever suggested that the eyes might be a cause of the trouble. Vision was plus 20-40 R, and plus 20-30 L, muscular balance normal, but convergence weak and upward rotation excessive. Quarter diopter convex cylinders, with axes 45 degrees nasal, gave normal vision. These, with the addition of one-half diopter presbyopic correction, were given for near work. He later reported benefit, and then non-benefit, from the spectacles, went back to my neurological friend, who treated his stomach, and still later came in to tell me that he had been cured by one of those quack "electro-xxxxx" machines, which do their work while the patient sleeps. My treatment may not have been successful, but the important thing is that the symptoms pointed very strongly to the eyes, and none of these able practitioners, including two competent neurologists, suggested an investigation in that direction.

Mr. W., an over-worked attorney and an old patient of mine, came to me on the apparent

verge of a nervous break-down from insomnia. His physician, prominent in neurology and general medicine, in desperation at the failure of his treatment, had suggested an examination of the patient's eyes. He had been wearing for the past year R—1. cyl. horizontal and L—.75 cyl. horizontal, with the addition of a half diopter presbyopic correction. As he was forty-four years of age and a hard student, I had not questioned the genuineness of his apparent myopia. Under homatropia the correcting lenses were found to be R+1. 75 cyl., axis vert., and L+1. 50 cyl., axis 15 degrees temporal. These lenses, with a presbyopic correction, were ordered, and the insomnia and other nervous symptoms disappeared.

Speaking of psychoses, I am reminded that our neurological friends consider an oversensitive conscience an evidence of an unsound mind, and I suppose they, in common with corporation lawyers and Rockefeller clergymen, as the normally sensitive conscience that which successfully keeps its possessor outside the state's prison. This consideration may not seem obviously germane to the subject in hand, but it has occurred to me in connection with the following case:

Harriet McC., 6 years old, had fallen several times, and on one occasion struck her head on the sharp base of a piano stool. Soon after this it was noticed that she could not use her right hand as well as the left. A little later irregular choreic movements began, and had continued about three weeks, when I first saw her. As her father had been a patient of mine, she was brought to me when the neurologist, to whom the family doctor had referred her, suggested an examination of the eyes. The only external evidence of injury was a small movable scar one-half inch above the left eye-brow and one inch from the middle line of the head. The choreic movements were not marked, and the only fact noted by me was the imperfect use of the right hand. When asked to pick up an object from the floor with that hand, she would grasp the right wrist with the left hand and then do as she was directed. Vision in each eye was limited to counting fingers at 20 feet. The pupils were normal in size and reaction. Repeated tests indicated normal muscular balance adduction and adduction each 10 degrees, sursunduction one-fourth degree. Under atropia, and with repeated efforts, the retinoscope showed refraction to be, R—3. cylinder axis 75 nasal, L—3.50 cylinder axis 75 temporal. No decided improvement of vision was demonstrated, but there seemed some improvement of the movements while under the influence of the atropia. The child was hysterical and somewhat unmanageable, a mouth-breather, and the subject of adenoids and nasal stenosis. The neurologist replied to my report

that he did not think the myopic astigmatism had anything to do with the child's condition. When I attempted to collect a very moderate fee for my service the father, who had always paid his own bills for professional services, like a man, declared that I had seriously, if not permanently, injured his child, presumably by the use of the atropia.

Mrs. W., 45 years of age, a large, healthy-looking woman, and mother of several healthy children, telephoned me one day, asking for an appointment. She said she had just learned that I was an eye doctor instead of a dentist, as she had supposed, that she was in great distress because of her oculist's opinion that she had atrophy of the optic nerve, and that she wanted an honest opinion. I found that she had been suffering for two years or more with pain in the eyes and at the back of the head, and during that time had had her spectacles changed several times, without benefit. Her oculist had finally told her that she had atrophy of the optic nerves, that he could do nothing more for her, and that six months more would probably be about the extent of her use of her eyes. Of course, she was frantic. The oculist, a man in large practice, had been recommended by her family physician, and she had had confidence in him. Her husband's employer now advised that a well-known ophthalmologist in a neighboring city be consulted. He assured her that there was no optic atrophy, and, after examination by himself and his associate, prescribed new lenses. The patient was also placed in charge of one of our skilled neurologists, who gave her a diet list with reference to a lithemic condition, from which he thought her to be suffering, with some apparent benefit. My examination revealed a normal fundus in each eye, very slight temporal concavity of normally vascular optic discs, and as much contraction of the visual fields (5 to 10 degrees) as one will find in twenty-five per cent of refraction cases. Vision in each eye was 20-20 plus. She was, of course, assured that she had no serious disease of her eyes. Four months later, as the pain in head and eyes did not abate, I was asked to investigate the refractive conditions. Mrs. W. came in great alarm, with dilated pupils from the instillation of her own eye-drops with her daughter's atropine medicine dropper. I found, R and L—.25 cylinder horizontal; muscular condition: orthophoria, 13 inches with +2. D. exophoria 3 degrees, sursumduction right and left 2 degrees, abduction 6 degrees, adduction 12 degrees, these findings varying somewhat from time to time. The quarter diopter concave cylinders were given for constant use, with two-diopter presbyopic scales, (she had been wearing convex half diopter spheres for distance and two-

diopter presbyopic correction). The right lens was later changed to—.37 cylinder, with decided benefit, the examination having been made under homatropia. The woman is still neurasthenic, and complains when she makes much near use of her eyes, but is greatly improved.

Some of the lessons to be derived from this case are so obvious that I will not mention them. The one important lesson which I wish to insist upon is, that low degrees of astigmatism, myopic or hypermetropic, are worthy of attention, and no intelligent ophthalmologist should be able to satisfy his conscience that he is doing his duty by his patient, when he fails to detect such low degrees, and prescribes spheres simply because, without the proper correcting cylinder, they improve the vision.

The following case illustrates the fact that many neuralgias, especially in women about the climacteric, are too largely attributed to general and constitutional causes, when local and specific causes ought to be sought and removed.

Miss F., 49 years of age, had been having headaches for eight years, especially pain in nose and back of the head, of neuralgic type, and her physician, a very competent man, had treated her for change of life till within two months, when he had advised having the eyes re-examined. Fifteen years before I had examined her eyes, and prescribed, R+.75+.25 cyl., axis 30 degrees nasal, L+.50 sphere, which had been satisfactory for seven years. I found R and L+.25 cyl. axis 60 degrees nasal, which gave only 20-40 vision, owing to lenticular changes in each eye. There was also a slight hyperphoria, with weakness of convergence. Correcting lenses for near and far, with rythmical exercises, have made the patient comparatively comfortable. There is still some pain in the nose and back of the head, especially on damp days, which may be accounted for by the pressure of one of the middle turbinals against the septum.

Mrs. P. has been an occasional patient for nearly twenty years. She has suffered from terrific attacks of supra-orbital neuralgia. The right cornea was the subject of variolous ulceration in childhood, and the eyes are anisometric: R+1.50-3. cyl. horizontal=20-20 L+.50+50 cyl. vertical=20-15. In April, 1897, being then 52 years old, Mrs. P. came for a change of her near glasses, having lately suffered severely from her neuralgia. In addition to the above refractive condition, I now found $\frac{1}{2}^{\circ}$ L hyperphoria and 1 degree esophoria, sursumduction being 2 degrees in each eye, and abduction 6 degrees. Presbyopic correction of 2½ D. was given, and operation was advised of a deflected septum and greatly enlarged middle turbinal. Three weeks later there was a severe attack of pain in both

eyes, lasting three days. The muscular condition was found to be L hyperphoria 1 degree, (by parallax 2 degrees), esophoria 2 degrees, right and left sursumduction 2 and 4 degrees, respectively. The deflected septum was straightened by the Gleason flap method, and the middle turbinal growth was removed by snare, both in June. On September 7th the patient reported that there had been no headache since the snaring operation of June 2d. On September 13th there had been a severe right hemicrania, lasting two days, following witnessing the carnival parade. Left hyperphoria was 2 degrees, and the left superior rectus was at once subjected to what was intended to be a partial tenotomy. It proved excessive, and a correcting sitch was inserted. The following week there was vertical and lateral orthophoria and entire absence of unpleasant symptoms. The patient has told me within the past year that she has remained free from headache.

I have personally suffered much from astigmatism and heterophoria. The full correction of the former and the partial correction of the slight manifest hyperphoria only increased the latter, and did not prevent the headache which attended a railway journey (unless I sat with closed eyes), and muscular exercises with prisms gave only temporary relief. The use of the ophthalmoscope or retinoscope when I was tired would cause nausea. In March, 1897, Dr. Stevens determined that I had excessive upward rotations of the eyes, anaphoria, with slight hyperphoria. Both superior recti were tenotomized, with immediate and permanent relief. I have done a considerable number of graduated tenotomies for heterophoria, mostly for cases that I had long and faithfully tried to relieve by other means, and I have had reason to regret not one of them. Many operations have been done in the past for heterophoria, just as they have been done for squint, which might have been avoided by the early and skillful correction of the refractive conditions, and it is to be remembered that the critics of graduated tenotomies have little reason for self-congratulation. The honest, intelligent, scientific man is the one who investigates the small things, as well as the large, the local and obvious, as well as the remote and general, the things that can be proved, as well as the things that can only be guessed. If our eminent neurologists, instead of abusing such men as Stevens and Gould, who have honestly and zealously, and, on the whole, most successfully, worked out the problems connected with refraction and heterophoria, would follow the early example of Weir Mitchell, by appreciating the importance of astigmatism and all other causes of eye-strain, they

would accomplish far more, both for their neurological patients and for medical science.

If our neurological friends insist that the best ophthalmologists are not agreed upon these questions, and that even Stevens and Gould would probably discount the claims, each of the other, that only proves that the best men are human, and does not in the least discount the essential value of what each man stands for. Gould insists that most oculists are incompetent to do the work of "the new ophthalmology," the chief feature of which is the accurate measurement and correction of astigmatism. My observation and experience have long since proved the correctness of his opinion. Stevens, having proved that serious nervous disturbances resulting from muscular imbalance and strain, and not removed by the accurate correction of refractive errors, could be cured by the accurate adjustment of the muscular tension, insists that such adjustment in special cases has value, and my personal observation and experience, both as patient and surgeon, prove the correctness of that opinion also.

The fact that I have not done a tenotomy in the past five years for heterophoria may be taken as evidence that such cases as require operative treatment are rare in the practice of the ordinary ophthalmologist. I am confident that it is legitimate evidence, also, that the accurate estimation and correction of astigmatism and other refractive errors would greatly reduce the number of operative cases in any other man's experience. To give this statement its full value, however, it is necessary to say that my practice is derived almost exclusively from the non-neurasthenic classes of the social order, while such a man as Stevens gets the neurasthenic culls from a large territory.

DISCUSSION

DR. ARTHUR SWEENEY (St. Paul): I feel myself incompetent to discuss Dr. Brown's paper for many reasons; first because I am supposed to be a neurologist, not an oculist, and for the second reason, that I would not know a diopter on the street if I met it, and it is absolutely impossible for me to follow Dr. Brown intelligently. I cannot discuss his paper, except from the standpoint of practical experience. I have treated many neurasthenics, and I have failed with many, and some I have cured.

When Stevens and Gould were writing on this subject we tried to relieve neurasthenics by sending them to the oculist. I sent my cases to a very good oculist who was a crank on slight defects. I put them into his hands, and he cut muscles, fitted glasses, and did many other things, but there was absolutely no result. I came to the conclusion that I was not fitted to distinguish what cases were due to eye-strain and what cases were due to other conditions. We know of many diseases that have been cured by an operation upon various parts of the anatomy. I do not know how to account for it, unless it be for the same reason that the homeopathic official surgeon cures many cases by operating upon the other end of the individual. Many of

my worst cases have gotten well as soon as they were convinced that it was merely a matter of mind with them. A reflex disease may be caused by piles, it may be caused by the eyes; or it may be caused by other conditions. Take it as they run, I found better results by treating them on ordinary neurotic lines than I did by sending them to oculists. I can say that in those cases I sent to oculists the results were comparatively nil. I believe this idea of eye-strain is very often overdone. For a person who is neurotic frequently has defective eyes. A remedy often lies in suggestion, a mere suggestion of doing something to the eyes; and in that very susceptible class of cases it is often sufficient to produce a cure for the time being. I think many of the statistics of relief that have been collected are not so much due to actual organic alterations in the eye-ball as the suggestion of doing something to the eyes, for we all know that neurasthenics are very susceptible to suggestion.

DR. HALDOR SNEVE (St. Paul): The war between the neurologist and the ophthalmologist is kept alive by such men as Doctors Stevens, Ranney, Gould Brown, and others. Opposition to the neurologist can easily be understood on two grounds: first, he does not expect a cure from any one measure; secondly, on the reflex theory. The reflex theory has explained so much for so many years that it is difficult to disabuse the mind of medical men of the belief that putting window-glass in front of an eye or removing a corn or an ovary will effect a transformation and cure the patient. I believe every one in this room has had the disappointment of sending some miserable neurasthenic cases to an oculist to have them cured by having the refraction corrected. The greater part of these troubles, so the ophthalmologists tell us, is due to a very small degree of error in refraction—a half or a quarter diopter is what makes the trouble.

I believe most of us who send cases to the oculist to have nervous troubles cured, have been disappointed. We all agree that some slight nervous manifestations may be benefited by the adjustment of proper glasses. The reflex theory is being knocked out all around. The surgeon has vainly tried to cure insanity and various other things by removing the ovaries and uterus. Dr. Gould would have us believe that De Quincy, Wagner, Napoleon, and a great number of other famous men suffered from migraine, and that they suffered from errors of refraction, which, if corrected, would have made them more comfortable. I think it would have been a dangerous thing to have had these men operated on to have alleged errors of refraction corrected. Perhaps we never would have heard of De Quincy, or have enjoyed the wonderful music of Wagner, or marveled over the victories of Napoleon; besides, I have yet to see a case of migraine cured by glasses. I believe a case of nervous disease is made up of a good many factors. It is not the correction of some one physical defect, but the correction of the habits of life, the avoidance of an extra amount of stimulants, such as whiskey and tobacco, the use of more sunshine, more fresh air, and by the correction of habits in our daily hygiene that we help. The correction of refraction has a place, and I would not decrie the correction of muscular unbalance, but I believe the proper place for errors of refraction and muscular unbalance is a very modest one.

DR. F. J. PLONDKE (St. Paul): This paper and the discussion have been of considerable interest to me, especially the latter, for while the gentlemen who claim that nervousness, headache, etc., are not caused by eye-strain no doubt have good reasons

for such an opinion; it is evident that they have never personally suffered from a decided ocular defect.

My knowledge of the eye and its pathology does not permit me to enter into this discussion intelligently, yet a defect of my own eyes has taught me some things which I believe can be gained only by a bitter experience.

I believe I have always been somewhat more nervous than the average man, that is to say, I was easily irritated, would get very "blue," etc., especially after using my eyes for near work continuously. When a boy I had frequent attacks of migraine. These attacks would come on sometimes as often as once in two weeks, and I frequently suffered with dull headaches during the interval. The attacks of migraine ceased at about fifteen, but the dull headaches continued, until at twenty I had my eyes fitted with glasses, which relieved the headaches for a number of years; finally the headaches again developed, and have continued more or less up to the present time, coming on almost invariably after reading or operating; in fact after any kind of near work. About a year ago (I had done a great deal of reading and other near work for three or four months previous), my eyes became so sensitive that I was unable to write a prescription without suffering severe pain. I also became very nervous and irritable. I went to the country for two weeks, and returned very much improved, but immediately on beginning to use my eyes for near work the old trouble again developed. All this time I had gone from one oculist to another, and all practically agreed as to the amount of hyperopia and astigmatism, but the correction of this defect gave me very little relief. Finally it was discovered that I had a decided muscular imbalance, and when an attempt to correct this error was made it gave me more relief than anything I had had; in fact up to that time I had been unable to read more than five minutes at a time without suffering severe pain. I could now read for half an hour at a time with comparative comfort. I have worn these glasses up to the present time, and have had no "blue" spells and practically no headaches unless I do near work for considerable time, when the old trouble again develops. But I can say without hesitation that I have been more comfortable during the past year, so far as my eyes are concerned, than I have been at any time in the last ten years. I realize that my error is not fully corrected and probably never will be so that I can use my eyes with comfort.

With regard to operation, I shall certainly hesitate as long as possible, and sincerely hope that I shall never be obliged to have my muscles tenotomized, as I do not believe that the good results from the operation are lasting. I am firmly of the belief that nervousness, headache, and a number of other conditions can be and are caused by eye-strain, and I believe I am a living example of the fact.

DR. E. J. BROWN (Essayist): It is hardly necessary for me to say much more. I think the remarks of Dr. Sweeney show very clearly the truth of what I stated in my paper. One such case as that described by the gentleman who has just sat down, is worth more than a thousand negative cases. I believe our neurologists to whom these cases come must either prepare themselves for doing this kind of ophthalmological work or must be very careful to whom they send their cases.

HOSPITAL BULLETIN

NORTHWESTERN HOSPITAL

MINNEAPOLIS

ABDOMINAL DIAGNOSIS*

By JAMES E. MOORE, M. D.

In our didactic work we have recently gone over the field of abdominal surgery, and I have selected this patient as one especially well adapted to the teaching of diagnosis of some of the pathologic conditions found within the abdomen.

The patient is a female, thirteen years old, with whose family history I am unacquainted. Something over one year ago her health began to fail, and now, as you see, she is greatly emaciated, and has a distended abdomen. This distension has come on gradually, and is now so great that her breathing is labored on account of the pressure upon the diaphragm. The cause of this enlargement might be pregnancy, a tumor, the presence of gas, or an accumulation of liquid. When examining a female who has arrived at the age of puberty, has not passed the menopause, and has an enlarged abdomen, pregnancy is the first thing to be considered. Many times the patient's statements must be discredited in this matter. In this case the age, thirteen, does not absolutely exclude pregnancy, because numerous instances of pregnancy at this age are on record, but the extreme enlargement, the emaciation, and the year's growth enable us to exclude it. We can exclude enlargement from accumulation of gas because there is no history of obstruction of the bowels and there is dullness on percussion over most of the enlargement.

Upon inspection we see that the enlargement is quite uniform, being as well marked above as below, and that it protrudes laterally. The shape of a well advanced pregnancy is quite characteristic. It is in the lower part of the abdomen, and stands out prominently as the woman lies on her back in a way that an abdomen full of liquid could not. A large tumor also stands out prominently, but rarely assumes the peculiar shape of a pregnant uterus.

Upon palpation I find that this abdomen is uniformly tense and elastic everywhere except in the left hypochondriac region, where a large solid mass can be felt.

Upon percussion we get a tympanitic note over the top of the enlargement and flatness along the flanks. When I place my hand on one side of the abdomen and tap the other side gently with my other hand I feel a wave of fluctuation. This fluctuation is unmistakable evidence of the presence of liquid. A large ovarian cyst, which may be found in a patient of this age, might yield this same fluctuation, but if it were a cyst the percussion note on top would be flat because the cyst would crowd the intestines to the sides and come up against the abdominal wall. In this case the tympanitic note is on top, showing that the intestines are floating on top, and the dull note along the flanks proves that the liquid is there. We have, therefore, demonstrated that fluid is present by inspection, the flattening out sidewise being characteristic, and by percussion. We have demonstrated by percussion that it is not a cyst, because the intestines are floating on top. There must therefore be an accumulation of liquid free in the peritoneal cavity.

So far in our examination we have found free liquid in the abdominal cavity and a large solid mass in the left hypochondriac region. Let us see if we can ascertain what relation, if any, these two conditions bear to each other. The liquid is not part of a general anasarca, because there is no swelling of the feet, and the heart and kidneys are normal. When a solid mass is felt in the abdomen we must decide whether it is one of the solid viscera belonging there, and, if so, whether it is normal in location, size, and consistence. If it does not seem to be an organ, is it a tumor, what is its character, and to what is it attached? This mass is in the left hypochondriac region, and might be the spleen, the left kidney, or the left lobe of the liver. By pressing down a little the hand comes into contact with this mass, and the percussion note is flat. The mass is movable, is intraperitoneal, and a sharp border can be made out toward the median line. In short, the location, shape, and mobility show that it is a spleen very much enlarged. The causes of enlargement of the spleen are malaria, leucocythemia, hydatids, typhoid, septic conditions, abnormal growths, and congenital syphilis. In this case it is not due to malaria, because the patient has been in Dakota all her life where there is no malaria, and the plasmodium is not in the blood. Blood examination also shows that it is not leucocythemia. There is not typhoid or sepsis, for the condition is of long standing, and the temperature is normal. Hydatids are very rare in this section, and the organ is evenly enlarged, being practically normal in shape. Malignant growths

*A clinical lecture delivered before the Senior Class of the University of Minnesota, at the Northwestern Hospital, December 16, 1905.

are very rare in this location and in a patient of this age, so I think we are safe in excluding them. This leaves congenital syphilis as a possible cause of this enlarged spleen.

An enlarged spleen from any cause rarely causes ascites, so it is more rational to look farther for a cause for this condition. Let us consider briefly other causes of ascites not already mentioned. The diagnosis in this case before it came to me was tubercular peritonitis which is one of the causes of ascites. There is lacking in this case the peculiar board-like feeling of the abdominal wall so characteristic of that disease when accompanied by peritoneal effusion, and the temperature is absolutely normal, whereas it would range from 99° to 102° or 103° if this were tuberculosis, so I have questioned that diagnosis from the first. Tumors of any kind, especially malignant growths, cause ascites, but in this there is no tumor, except this enlarged spleen, and we would not expect a malignant growth at this age. The most common cause of ascites is obstruction to the portal circulation from pathologic changes in the liver. The conditions in the liver which cause ascites are amyloid changes, cirrhosis, malignant growths, hydatids, abscess, suppurative phlebitis, and syphilis. Amyloid changes are common in children, but they accompany chronic suppuration, especially of bone due to tuberculosis, and these conditions do not obtain here. Cirrhosis occurs in alcoholics, and we have already excluded malignancy. Hydatids could be felt if they were present. This patient has not been in a tropical climate, nor has she suffered from hemorrhoids or other inflammatory conditions of the intestines that might cause abscess or suppurative phlebitis.

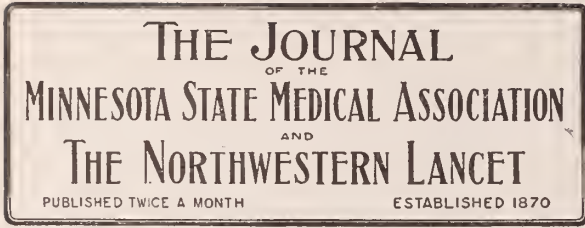
This reasoning, by exclusion again, leads us up to syphilis as the most probable cause of pathologic changes in this child's liver, and the cause of the ascites. In this young patient the syphilis is probably congenital. There are three well recognized varieties of syphilitic liver: (1) a diffuse hepatitis, characterized by a large hard liver due to a great increase of the connective tissue and an accumulation of many small gummata; (2) a thickening of Glisson's capsule, or perihepatitis; (3) large gummata. These tumors may come in either an adult or a child, and may be manifestations of either tertiary or congenital syphilis. They are smooth, rounded, yellowish, cheese-like nodules, and are usually accompanied by deep-bluish white scars, due to the disappearance of some of the nodules. The liver may be

enlarged, but is apt to be somewhat contracted. When the disease is allowed to go untreated the liver finally becomes an irregular mass of gummata held together by fibrous tissue, and has been called a botryoid liver on account of its fancied resemblance to a bunch of grapes.

You will notice a scar over the upper part of the left rectus muscle. When this patient first came to me she was suffering, as she is now, from distention and pressure on the diaphragm, and instead of tapping her with a trocar I made an opening large enough to introduce a finger, in order to clear up the diagnosis. I found that there were no tubercular nodules on the peritoneum, and that this mass in the left side is a large smooth spleen. I passed my finger over to the liver and found that it is a mass of smooth, round nodules, and that it is a syphilitic liver of the third variety before mentioned, so we can be quite positive that this child is suffering for the sins of her ancestors, and has congenital syphilis. The disease accounts for the enlarged spleen and for the changes in the liver which cause the ascites by obstructing the portal circulation.

Fortunately, syphilis is a common cause of miscarriage. I say fortunately, because it is better for a syphilitic child to die before it is born. There are early and late evidences of congenital syphilis with which you should be familiar. A syphilitic child is very often born with pemphigus, which is characterized, as you know, by bullæ on the palms of the hands and soles of the feet. It usually has the "snuffles," and looks like a weazened-up old person. Later its nose may be depressed, its lips and forehead prominent, and its teeth notched. It is subject to iritis, chronic inflammations of the ear, deafness, bone and joint lesions, and gummata in the liver, kidneys, brain, and other organs. It is the exception when all of these lesions are present in any one case. This patient, as you see, has the protruding lips, the prominent forehead, and the old look, in addition to the gummata in her liver.

The diagnosis in these cases is important, because, bad as they are, they are not utterly hopeless. They sometimes respond very promptly to mercurial inunctions and full doses of iodid of potassium. This patient is now having inunctions and taking about twenty grains of iodid of potassium three times a day. The outlook in her case, however, is very grave, because the condition was recognized so late.



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MEDICAL EXAMINERS FOR INSURANCE COMPANIES

During the recent insurance investigation the medical examiners and directors have escaped criticism. The large salaries paid to the high officials and the reckless use of money deposited by the policy holders and the rake-off of the various agencies, have created much bitterness. As usual, the modest medical man and his responsibilities are overlooked by the legal investigators and the public.

An editorial in the New York Medical Times for January suggests that it would be interesting for the legislative committee to call the medical directors of the various companies and ascertain their pay. It would be equally instructive to follow the footsteps of the medical examiner who determines whether a risk is safe or not, and to discover what fee he receives. An ordinary company pays the examiner two dollars for the examination, and it is probably all it is worth, as it usually consists of a brief inspection of the applicant, a momentary application of the ear over

most of the clothing, and a hurried filling of blanks.

A company which pays three dollars is supposed to occupy a higher standard, and the company which pays the munificent sum of five dollars demands much time of the examiner, special and frequently inopportune appointments, an examination of the applicant stripped, and a urine analysis, together with a long history and a professional opinion as to the fitness of the applicant.

The large companies, particularly those that have been scathed by the Hughes investigation, have made an effort to reduce the examiner's fees, and to many of the large cities they have sent new men who are under salary to do the work. The fees are thus reduced, and the examiners who have been in the employ of the companies for years have been summarily deprived of an income instead of increased fees as a reward for long, faithful and conscientious service. The medical examiners and directors are the real centers of all insurance companies. They occupy positions of trust, and are notoriously underpaid for their opinions based upon personal examinations. Except in the largest cities the medical man is unable to make a fair living from his insurance examinations without engaging in general practice. Many examiners, however, make enough to pay for their personal insurance premiums, and are thereby satisfied. The man who makes a perfunctory examination, and is hurried and careless in his history-taking, is unjust to his company and himself. His work redounds to his discredit, sooner or later. The examiner who conducts his examination carefully and is painstaking in his methods has the reward of work well done, but is inadequately compensated for his services.

As a rule a company seeks a careful man, as it is for its best interests. When a physician applies for the position of insurance examiner he is obliged to refer to his colleagues for a recommendation as to his character, integrity and skill. For these qualifications the company is willing to pay two or three dollars for each examination even when the face of the policy is five thousand or ten thousand dollars.

In country towns examinations are few, yet many a physician is ambitious to be an examiner, and to be an examiner in the majority of cases

he is himself obliged to take out a policy in the company. The time has come for the medical man to place a fair valuation upon his services, or to refuse the paltry fees offered. Now that the various county and district medical societies are laboring to produce a uniform fee-bill, it would be well to let it be understood or stipulated that all examinations are to be thorough and satisfactory to both physician and company. With this understanding there would be no rush examinations. The company would have confidence in the methods of the examiner, and many mistakes and much unpleasantness be avoided. Cheap companies and cheap fees demand the services of cheap physicians, and neither deserve the respect of the would-be policy holder.

AN APPRECIATION

We think it is to be regretted that many newspapers have obtained, or ignorantly or wilfully taken, a wrong view of physicians' motives in their attempts at regulation of the relations between themselves and the public; and this is particularly true of the country press, whose great influence with their readers is generally admitted. These wrong views of motives crop out very forcibly whenever a county or a state society takes any action in regard to medical practice laws or the conduct of their members in the matter of advertising, and not infrequently when a society is organized, the inference often being that its purpose is to obtain higher fees.

But let us never overlook the fact that, at least in the country, the doctor is often appreciated even beyond his deserts. When the Trail and Steele County Medical Society was organized in North Dakota the other day, a representative of *The Farmer*, of Mayville, asked the secretary of the organization if the society meant higher prices. The secretary replied that the doctors were trying to form just such a society as the editors have. The editor, perfectly satisfied with the answer, instead of villifying the men with whose daily work he was familiar, spoke thus in his next issue:

"If their society means the same as that of the editors, it does not mean higher prices, but it means a better understanding of their business, and a better acquaintanceship with each other,

and a sympathetic feeling for each other in their efforts to perform their duties."

The organization that means less has no excuse for existence; and the organization that cannot so impress itself upon an intelligent observer lacks force, to say the least.

SIoux VALLEY MEDICAL ASSOCIATION

A district, or valley, society which embraces the corners of four states, Minnesota, Iowa, South Dakota and Nebraska, met in Sioux City, Iowa, on January 18th and 19th. About one hundred and fifty physicians were present on both days. The society is a very strong one, and the program was well arranged with papers and lectures by prominent men from the Valley, Chicago, St. Paul, Minneapolis and Rochester. The banquet at the Hotel Mondamin, was a great success from a gastronomical and toastanonical standpoint.

The toastmaster, Dr. Park, of Sioux City, and the principal speaker of the evening, Dr. J. M. Mayhew, of Lincoln, Nebr., outdid themselves.

An exceedingly interesting program was presented, and it would bear favorable comparison with the program of any of our state associations. There were twenty papers listed, but some of them were not delivered. We are pleased to be able to give our readers opportunity to read some of the papers, that by Dr. George F. Butler, of Chicago, appearing in this issue.

The next semi-annual meeting of the society will be held at Ft. Dodge, Ia., in June.

DR. ASA EMERY JOHNSON

Dr. Asa Emery Johnson, of Minneapolis, was born in New York state in 1825, and was nearly 81 years of age at the time of his death. He came to Minnesota, and located at St. Anthony Falls, (East Minneapolis) in 1853. The town was then very small, and very few physicians were needed. In 1858 Dr. Johnson was elected county physician.

As a geologist and botanist he made some important discoveries, and in 1873 became the founder and first president of the Minnesota Academy of Science, which still stands as a

monument to the dead physician. A newspaper clipping states that Dr. Johnson was the first practitioner to use quinine in the treatment of typhoid fever, and during an epidemic of the disease, in 1882, he lost but two of the 128 patients that came under his care. This incident alone shows how the treatment of disease varies in the years that go by, and also demonstrates the importance that is attached to medicinal agents.

For the past fifteen years Dr. Johnson has not been in active practice. He became physically incapacitated, yet preserved his mental faculties. He was a keen, shrewd and humorously minded man, and an excellent companion in spite of his sufferings. He was an old landmark, and, if he had preserved records of his experiences, his outline of historical advances in Minneapolis would be valuable reading.

There are but few of the old practitioners left in the state, and their passing away is a gentle reminder that the procession of medical souls is a panorama for younger medical men.

CORRESPONDENCE

MEDICAL PRACTICE LAWS

Silver Lake, Minn., January 22, 1906.

TO THE EDITOR:

I would like to call your attention to a new law recently passed by the Wisconsin legislature, the extract of which I enclose, as published in the Journal of the A. M. A. of January 20th.

The Legislative Committee of the Minnesota State Medical Association should propose a similar bill before the next meeting of our legislature. Only by enacting laws that will eradicate quackery, and men guilty of immoral, dishonorable, and unprofessional conduct, can our medical profession keep up its high standard, and be a blessing to the general public. It is but two weeks ago that a young man of twenty, residing in this locality, became violently insane, and had to be committed to the hospital at St. Peter, his mania being brought about through reading and visiting "doctors" who are permitted to advertise in our public press such things as "lost manhood restored," "ills and ailments brought about by self-abuse cured," etc.

Medical brethren living in the cities do not realize the vast number of young men living in the rural districts who are caught by such bait and will visit such fakirs, where many of them will spend all their earnings, and when relieved of their money are subjects more fit for an insane asylum than for any other place.

T. W. HOVORKA, M. D.

The Wisconsin law attempts to define "immoral, dishonorable, or unprofessional conduct," and it seems to us that it has not done so in a manner that will aid the enforcement of the law, especially in jury cases, and all such cases will doubtless be jury cases.

The evil complained of by one correspondent is very great, and all honest men want to see it abolished, but the work of doing so is an herculean task.—THE EDITOR.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular meeting of the Academy was held at the Commercial Club in St. Paul, January 31, 1906. Owing to the regular date conflicting with other meetings, it was called one week earlier than usual. The president, Dr. A. MacLaren, was in the chair, and there were present thirty-nine members and five guests.

In accordance with the new constitution all business was transacted by the Executive Committee at a previous session.

Dr. A. J. Gillette reported a case on myositis ossificans. He said:

This case of myositis ossificans came to me about three months ago. The child is aged about 13 years. As near as I can tell from the history the early symptoms were muscular rigidity in the cervical and upper dorsal regions with the typical radiating pains usually present in Pott's disease, or rheumatoid arthritis in this locality. Since then the child has been growing worse until the head, neck, shoulders, ribs and vertebræ are held perfectly immovable by ossification. The arms are flexed. One is flexed and held perfectly rigid by the ossified biceps muscle, which is shown in the figure. The abdominal muscles are also partially ossified.

This is the first case I have ever seen, and I have no experience with the disease whatever. I quote from the literature:

"The pathology of this disease consists of the formation of bone tissue in the connective tissue surrounding the muscles. This is of a periosteal type, and occurs in plates of irregular shapes. The affection is one largely affecting children and its cause is unknown. Trauma is a cause of many cases, and at times the disease is progressive, attacking one muscle after another. The affection is most commonly found in the forearm, leg, or thigh, but any muscle may be involved. The affection is manifested clinically by the appearance of tumors involving the muscle, which may or may not be painful. Fever may be present or absent. The muscles involved are stiffened and may become useless, while at other times but little inconvenience is felt. No satisfactory treatment has been formulated, and no measure has been found to control the disease. The tumors may be excised."—Orthopedic Surgery. Bradford & Lovett, Edition III.

Dr. Gillette reported also a case of double hip-joint disease and tuberculosis of the knee in a boy with the peculiar feature that both thighs were abducted, instead of adducted, as is usually the case.

Dr. S. Marx White reported a case, and showed microscopic sections, of carcinoma of the prostate, in which the removal had been made for simple hypertrophy, and the gross specimen had shown no evidence whatever of malignancy.

Dr. W. J. Mayo, of Rochester, read a paper entitled "Cancer of the Rectum." It was discussed by Drs. Moore, Little, A. Schwyzer and A. W. Abbott.

Dr. Geo. Douglas Head read a paper entitled "Dilatation of the Stomach." It was discussed by Drs. Roberts, Moore, Mayo, Benjamin, W. A. Jones and Staples.

A. W. DUNNING, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A stated meeting of the Hennepin County Medical Society was held February 5, 1906, Dr. F. C. Todd, president, in the chair, and sixty-eight members present.

The Executive Committee recommended that

the dues for 1906 be fixed at \$7.00. The committee also advised that a called meeting be held on the third Monday of each month until the summer vacation. On motion the above recommendations were adopted by the Society.

The following applications for membership were received and referred to the Board of Censors:

Dr. Henry C. Cook, cor. 11th st. and Nicollet ave., John Hopkins, 1902.

Dr. Robt. A. Campbell, 844 Andrus Bldg, U. of Minnesota, 1896.

Dr. C. S. McKee, 4100 Upton ave. S., U. of Toronto, 1896.

Dr. E. W. Alger, 7 4th st. S. E., U. of Minnesota, 1902.

Dr. Chas. A. Reed, 822 Andrus Bldg.

The following names being reported favorably by the Censors were elected to membership:

Dr. Henrik Nissen, 523 1st ave. S., U. of Christiana, 1888.

Dr. John Butler, 403 Pillsbury Bldg., U. of Minnesota, 1903.

Dr. A. K. Hagaman, Anoka, U. of Minnesota, 1903.

Dr. S. H. Van Cleve, 301 Central ave., College of Physicians, 1880.

Dr. J. P. Sedwick, 26th and Grand ave., Rush Medical College, 1899.

Dr. Benjamin moved that all reports of cases be postponed till after the regular program except the case reported by Dr. W. A. Jones; carried. Dr. W. A. Jones then gave the history and showed a case of Friedreich's ataxia.

Dr. L. W. Day reported for the Milk Committee, urging members to encourage the use of the certified milk.

Dr. C. N. Spratt read a paper on Submucous Operations on the Septum Nasi.

The discussion was opened by Dr. Wm. P. Murray, and participated in by Drs. Watson, Porteous, Campbell, Brown and Todd, the discussion being closed by Dr. Spratt.

Dr. Benjamin then exhibited a diseased appendix and a tubercular kidney, giving a history of the cases from which they were removed.

Dr. Jacob Hvoslef addressed the Society on the life and character of the late Dr. Karl Bendeke.

A called meeting of the Society will be held in the Society's rooms, Andrus Building, Monday, Feb. 19, 1906, at 7:45, sharp.

Program:

1. Sanatorium Treatment of Tuberculosis, Dr. W. D. Sheldon.
2. Early Diagnosis of Tuberculosis, Dr. G. D. Head.
3. The Public Aspects of Tuberculosis, Dr. J. G. Cross.

C. H. BRADLEY, M. D., Secretary.

CAMP RELEASE DISTRICT SOCIETY

Camp Release District Medical Society, comprising Renville, Chippewa, Lac qui Parle, Yellow Medicine and Sibley counties, held its annual meeting at Olivia, January 11th.

Drs. J. W. Helland, of Maynard, E. L. Maurer, of Clara City, F. W. Burns, of Watson, H. L. Stolpestad, of Lafayette, G. S. Carpenter, of Porter, and W. A. Angell, of Canby, were elected to membership.

The following officers were elected for the ensuing year: President, Dr. D. N. Jones, of Gaylord; vice-president, Dr. W. A. Lumley, of Renville; secretary, Dr. R. D. Zimbeck, of Montevideo; treasurer, Dr. H. W. Hendrickson, of Montevideo; censors, Drs. F. H. Hacking, of Granite Falls, W. Z. Flower, of Gibbon and H. M. Johnson, of Dawson. Drs. D. N. Jones and G. H. Mesker were elected delegates to the State Association, and Drs. W. P. Lee and J. H. Titus alternates.

Dr. H. W. Hendrickson, of Montevideo, read a paper on "The Early History of Medicine," and Dr. H. P. Mee, of Gaylord, on "Gonorrhoea." The Secretary read a letter from Dr. C. B. Powell, of Bellingham, on "The Patent Medicine Evil." Liberal discussion followed the reading of each paper.

At 8 o'clock the members met at the Grand Central Hotel, where each was provided with a "pardner," and invited to a banquet prepared by the local physicians and the citizens of Olivia. Toasts with responses by visiting physicians and residents of Olivia followed, Hon. M. H. Dowling acting as toastmaster.

The meeting was well attended, and was one of the most interesting the Society has ever held.

The Society is in a prosperous condition, having fifty-six members, and a good surplus in the treasury. The next meeting will be held at Madison, April 19th.

R. D. ZIMBECK, M. D., Secretary.

THE PARK REGION DISTRICT AND COUNTY SOCIETY

The annual meeting of the Park Region District and County Medical Society was held at Fergus Falls, on January 17, 1906.

The following officers were elected: President, Dr. C. W. Meckstroth, Brandon; first vice-president, Dr. L. A. Davis, Dalton; second vice-president, Dr. J. C. Serkland, Rothsay; secretary and treasurer, Dr. O. M. Haugan, Fergus Falls.

The various officers reported, and the Society showed a marked increase in membership during the past year. Six new members were admitted at this meeting.

Papers were read by Dr. Brabec, of Perham, upon "Appendicitis—Some Clinical Experiences;" also a paper by Dr. Gilkinson, of Osakis, on "A Patient's Reminiscences of a Siege of Typhoid Fever."

Dr. W. A. Jones, of Minneapolis, was present and delivered a splendid address on "The Attitude of the General Practitioner to the Neurotic."

The address and papers were thoroughly appreciated and evoked general and interesting discussion.

The next meeting of the Society will be held at Fergus Falls in April.

O. M. HAUGAN, M. D., Secretary.

OLMSTED COUNTY MEDICAL AND SURGICAL SOCIETY

The annual meeting of the Olmsted County Medical and Surgical Society was held at Rochester, January 5th. The Executive Committee made the following recommendations: That hereafter the meetings of the Society be held monthly; that arrangements be made to have diagnostic clinics at St. Mary's Hospital at least two or three times a year; that at each meeting the papers presented be confined to the discussion of a single subject; that at least two

or three times a year papers of interest to the general public be prepared, and read at an open meeting, and also be published in the local papers.

Dr. C. L. Chapple read a paper on "Sanitary Prophylaxis," and Dr. A. D. Maschger read a paper on "X-Ray Treatment of Goiter."

The following were elected officers: President, Dr. C. T. Granger, Rochester; vice-president, Dr. George Steven, Byron; secretary and treasurer, Dr. John E. Crewe, Rochester.

JOHN E. CREWE, M. D., Secretary.

NEWS ITEMS

Dr. A. Gullixson, of Lake Mills, has moved to Bricelyn.

Dr. Asa E. Johnson, of Minneapolis, died last month, at the age of 81.

Dr. L. C. Kron has moved from Enderlin, N. D., to Valva, in the same state.

Dr. W. A. Kriessel, of Milbank, S. D., is doing post-graduate work in St. Louis.

Dr. W. R. Ball, of Mitchell, S. D., is taking a special course in surgery in Chicago.

The annual report of St. John's Hospital, of Springfield, shows the hospital to be self-sustaining.

Dr. D. E. Cavanaugh has resumed practice in West Duluth, where he was located several years ago.

Dr. J. H. Vogel, of New Ulm, was married last month to Miss Antoinette Crone, of the same place.

Dr. W. D. Hammond, of Isanti, is taking a course of lectures in medicine and surgery in Chicago.

Dr. A. J. Ames, who has been practicing a number of years at Wheaton, has moved to Forbes, N. D.

The Deaconess Hospital, of Grand Forks, N. D., which has been undergoing extensive repairs, has been reopened.

Dr. Inez Brown, of Sioux Falls, S. D., has been taking a special course in eye, ear, nose and throat work in Chicago.

Dr. J. W. Warren, a recent graduate of Kingston University, has formed a partnership with his brother at Leeds, N. D.

Dr. B. D. Verret has been appointed government physician for the Turtle Mountain Indian Reservation in North Dakota.

Dr. F. A. Anderson, of Wisconsin, who has been spending a year and a half in study in Europe, has located in Madison, S. D.

Dr. W. Y. Corry, of Hannah, N. D., is taking a post-graduate course in Chicago, and will not return to Hannah, having sold his hospital at that place.

Dr. Thomas H. Hay, of Milwaukee, Wis., has purchased a tract of land at Stevens Point, Wis., where he will build cottages for the care of tuberculous patients.

At the recent meeting of the Blue Earth County Medical Society the entire time was given to talk concerning the new Immanuel Hospital soon to be built in Mankato.

Dr. T. M. MacLachlan, of Boston, Mass., who has been studying in Germany, has located at Bismark, N. D., and will devote himself to eye, ear, nose and throat work.

The St. Peter Commercial Club has appointed a committee to raise \$14,000 as a hospital building fund. Church societies and lodges will be asked to furnish the equipment.

The board of managers of the Owatonna Hospital has passed a resolution against Sunday operations except in emergency cases. The action was taken to relieve the hospital help, and give them a day of rest.

The City and County Hospital, of Albert Lea, has adopted the following charges to physicians for operations in the hospital: \$3.00 for each operation by a physician resident in the county, and \$6.00 for a non-resident.

The Trail and Steele County Medical Society was organized at Mayville, N. D., last month. The following were elected officers: President, Dr. K. A. Wadel, Portland; vice-president, Dr. George McIntyre; treasurer, Dr. A. N. Currie, Hatton; secretary, Dr. E. C. Haagenson.

Dr. W. A. Beach, the homeopathic physician whose name is now much before the public as a homeopathic member of the State Board of Medical Examiners, has become a member of the Blue Earth County Medical Society. A good many homeopathic physicians are joining county societies.

It has been decided that a hospital to be built by the United Norwegian Lutheran Church shall be located at Rugby, N. D. Three villages were competing, Rugby, Church's Ferry and Bottineau. Instead of giving the hospital to the village offering the largest bonus, it was agreed to permit the villages to offer the same amount, namely, \$8,000, and then decide upon the merits of the location, and thus Rugby got the hospital.

The first meeting of the Olmsted County Society to witness clinics at St. Mary's Hospital, Rochester, was held last month. Surgical clinics by Drs. W. J. and C. H. Mayo, medical clinics by Drs. Graham and Plummer, and pathological clinics by Drs. Wilson and Maschger, made up an instructive program.

The legality of Gov. Johnson's recent appointment of three regular physicians on the State Board of Medical Examiners, will have to be settled in the courts, as the Board will recognize Dr. Beach, the retiring homeopathic member, until the supreme court decides that his successor has been regularly appointed. The law requires that three members of the Board shall be homeopaths. The governor claims the right to appoint whom he pleases, and he did so.

The Houston-Fillmore County Society held its annual meeting in Caledonia, January 6th, and were the guests, at an elaborate banquet, of Dr. Browning. After a clinic at the hospital, and a brief program, the old officers of the society were re-elected, as follows: President, Dr. W. E. Browning, Caledonia; vice-president, Dr. W. B. Grinnell, Preston; secretary, Dr. F. A. Drake, Lanesboro; treasurer, Dr. L. K. Onsgard, Houston. Six applications for membership were received.

Licenses were granted to the following twenty-three physicians at the recent examination of the State Board of Medical Examiners, of North Dakota:

W. A. Bessessen, Fargo; V. G. Morris, Mylo; B. Lankester, Crosby; W. H. Melvin, Beach; G. B. Ribble, LaMoure; P. G. Arzt, Balfour; J. Bursma, New Salem; S. D. Coffin, Eric; M. P. Rindlaub, Fargo; Hugh Miller, Turtle Lake; L. H. Kermott, Towner; O. F. Schussler, Fairdale; F. A. Bordwell, Adams; O. W. McClusky, Cleveland; H. Vande Ever, Pingree; J. W. Stibling, Jamestown; E. R. Linder, Egeland; F. T. Benort, Nekoma; J. W. Warren, Leeds; H. W. F. Law, Hannah; A. J. Henning, Taylor; W. N. Keener, Nesson; W. F. Casavaw.

The Mitchell District Medical Society met in Mitchell, S. D., in December, with the best attendance in the history of the society. Several excellent papers were read, and the District Councilor, Dr. F. W. Freyberg, spoke on organization. The following are the officers for 1906: President, Dr. W. R. Ball, Mitchell; vice-president, Dr. T. D. Smiley, Mt. Vernon; secretary, Dr. E. F. Reamer, Mitchell; treasurer, Dr. F. W. Freyberg, Mitchell; delegate, Dr. G. A. Clauser, Bridgewater. A new fee-bill was adopted. Among the items are the following: Day calls, \$1.50; night (10 p. m. to 7 a. m.) calls, \$2; mileage, first three miles, \$1.00 per mile one way; ad-

ditional miles, 50 cents each; night mileage, \$1.00 per mile for the first ten miles; consultation at office or by telephone, \$1.00 to \$10.00.

PRACTICE FOR SALE

A good opening in a village of 530 inhabitants, 30 miles from the Twin Cities, with the nearest physician twelve miles away. Practice will be turned over to the purchaser of my driving outfit, drugs, etc., for \$500. Reason of selling: I am going to the city to practice. Address "M," care of this journal.

PARTNER WANTED

I want a partner with \$1,000 or \$1,500 to help in establishing a hospital. I have a growing practice now paying between \$3,000 and \$4,000, but most of the profitable business goes to the Twin Cities, on account of lack of hospital facilities here. Partner must be a Norwegian and speak the language. A splendid opening for the right man. Address B., care of this journal.

PHYSICIAN WANTED

A Norwegian physician is wanted at Lankin, N. D., where the population is mostly Norwegian. For further information address B. B., care of this office.

PRACTICE FOR SALE

In a town of 350 in Southern Minnesota, mixed nationality. Practice established seven years; no competition; nearest town eight miles; country thickly settled. Practice goes to purchaser of my residence, new and modern, and cost \$1,600. One-third cash. Will introduce successor. Reason for selling, I am going to the city. This is a bargain. Address "E," care of this journal.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during the fine season in the delightful city, write for particulars, to New Orleans Poly-clinic, P. O. Box 797.

WANTED

To form a partnership, act as assistant, or share office with a physician in a large city in Minnesota, Minneapolis preferred. Have had five years of general experience; age 27; speak Norwegian; will give and expect references. Address N. M., care of this journal.

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SYMPOSIUM ON TUBERCULOSIS*

THE CARE OF THE TUBERCULOUS

By H. M. BRACKEN, M. D.

Secretary of the Minnesota State Board of Health

ST. PAUL

That this is becoming an all-absorbing topic is evidenced by the number and character of the organizations which have sprung into existence during the past few years, having for their object the suppression of this disease. Its treatment by means of drugs has long been recognized as practically hopeless. Such agents are of benefit only in giving temporary relief to the advanced cases.

In order that the tuberculous may be properly cared for, the most important factor is the early recognition of the disease, and this, followed by the most simple treatment—plenty of sunlight, fresh air, proper food, and rest—often brings most satisfactory results. The disease having been diagnosed early, two facts become important: first, the patient, if old enough to appreciate the necessity of proper care, should be advised as to the nature of the disease and its curability; second, the patient and all concerned should be instructed as to the infectious nature of the disease. The first point is of importance in order that the patient may fully realize the necessity for proper living if recovery is to be brought about. Too often in the past the physician has thought it unwise to inform the patient as to the nature of the disease, fearing that such knowledge would have a depressing effect. When tuberculosis was looked upon as almost universally fatal such an argument in favor of keeping the patient in ignorance as to the nature of the disease might have been excusable, but now

when it is well known that a large proportion of incipient cases may recover, if properly cared for, the importance of the patient being early informed as to the nature and curability of the disease cannot be overestimated.

Every possible means should be used to insure an early diagnosis. The microscope and the use of tuberculin are definite aids in demonstrating the first symptoms of this disease. The presence of the tubercle bacillus in sputum is an undebatable evidence of tubercular infection of the respiratory tract. It is possible that the disease may exist without the specific bacillus being found in the first microscopical examination, but repeated examinations will, in all probability, finally reveal its presence.

The tuberculin test is an important aid in the early diagnosis of this disease. A negative microscopical examination of sputum for the tubercle bacillus may be followed by a positive tuberculin reaction. Physical signs are often misleading, and should never be depended upon alone in the examination of suspicious tubercular cases.

With a diagnosis once made in an early tuberculous case the question of treatment becomes all important. Sunlight and fresh air, as has already been stated, should be given first place. The question at once suggests itself: How are these to be obtained? Ordinarily not in the home, for the sleeping rooms are rarely supplied with sufficient sunlight, and the home influence is too often opposed to an abundance of fresh air. This is as true of the farm house as of the city home. The sanatorium at once becomes an important factor in the treatment of the incipient tuberculous. Its advantages are (1) that it takes the patients away from home influences and places them under proper conditions to receive these two important factors in their treatment, sunlight and fresh air, for all sanatoria are constructed with

*Papers in this symposium before the Minnesota State Medical Association, June 1 and 2, 1905, were read by Drs. H. M. Bracken, H. L. Taylor, George Douglas Head, and John G. Cross. The papers of Drs. Head and Cross were published in *The Northwestern Lancet*, June 15, 1905.—The Editor.

this object in view; (2) it is educational in its influence, for its inmates learn how to live properly, if they are to recover, and how to protect themselves and others from future infection. The sanatorium is restful, not only to the patient, but to his family, for during his absence from home the caretakers are relieved to a certain degree of their responsibilities so far as the patient is concerned. The sanatorium has demonstrated that a change of climate which was formerly considered a *sine qua non* for the tuberculous is by no means a necessity. In fact, a tubercular patient who recovers in the climate to which he has been accustomed, has a better chance to continue his residence in that climate than he would have had had his recovery been due in part to a temporary residence in a dryer and more equable climate than that to which he had been accustomed at home.

Sanatorial treatment has, up to the present time, been considered chiefly as a state aid in the care of the tuberculous, but this is a mistake. If the sanatorial treatment of tuberculosis in Minnesota is to be limited to a state institution it will have accomplished but a fraction of the good that should have resulted from such treatment. The educational effect of the sanatorium is greatest upon those who can actually watch its operation. The educational effect of a sanatorium should be upon the healthy people of a community, as well as upon the tuberculous individuals cared for. With a remote sanatorium the sentiment of the healthy people is against the institution. It is looked upon as a dangerous place, and the result is legislation against establishing such in their communities, similar to that which was recently carried through in New York. A nearby institution has the reverse effect, as illustrated in the village of Rutland, Mass., where the people have learned that the patients at the state sanatorium know how to take care of themselves in order to prevent the infection of others. Not only this, but they have learned through watching the sanatorium treatment the best means of preventing the disease among themselves. Rutland, instead of placing a barrier against the presence of tuberculous patients in its midst, has actually become a resort for those who, for one reason or another, cannot enter the sanatorium. The state institution at Rutland therefore not only makes possible the recovery of the tuberculous patients within its walls, but it educates patients and people in the proper care of the disease, and tends to break down that unreasonable fear which has been so aptly described as *phthisophobia*.

A sanatorium that is near the people whom it serves will have a wider usefulness than one that is far remote. For example, a sanatorium near Winona would be of far greater benefit to the citizens of Winona and vicinity than will the

state institution at Walker. The idea set forth in Ontario of creating county sanatoria, while it has never produced any results, is ideal from the theoretical standpoint, and if given a fair chance would undoubtedly prove its practicability.

Again, a single state sanatorium can care for but a small proportion of the state's tuberculous. Minnesota had two thousand deaths from this disease in 1904. It is fair to presume that there are at least ten thousand tuberculous individuals in the state, and in all probability more than half of this number should be in special institutions constructed for their care. Not a single individual here this afternoon will live to see state institutions in Minnesota provided for any such number of tuberculous patients. Are we then to give up all hope of caring for those not provided for by the state? By no means. Local sanatoria must be established, not only for their direct educational effect, but because of an absolute need. Minneapolis, St. Paul, and Duluth should each and all make provision for the care of all their needy tuberculous patients, and in using the term "needy" I am not referring to the pauper class. It is a disgrace that these cities have made no provision for the care of their tuberculous. They have not only overlooked the demands of humanity, but of protection, for every tuberculous individual is a center of infection unless he has been instructed in the means of preventing the infection of others. Failing to care for the tuberculous is not only inhuman, but financially ruinous, for of the healthy, some at least who are constantly exposed to infection will inevitably contract the disease and die. Human lives have a money value, and to sacrifice human life needlessly is a poor business proposition. But the cities named are not the only offenders in this state, for of the two thousand deaths from tuberculosis in Minnesota during 1904, but six hundred and fifty-six (about one-third) occurred within their boundaries. The others died in the smaller cities and in the country districts. This fully demonstrates the need of small sanatoria scattered throughout the more densely populated parts of the state at least.

At present the only efficient public undertaking carried on in Minnesota looking to the care of the tuberculous is that of the Anti-Tuberculosis Committee of the Associated Charities in Minneapolis, and this institution, while doing its utmost, reaches but a small percentage of those that should be cared for in that city. While the work is largely among the poor, this Committee has had, up to the present time, no financial aid from the city, although it is actually caring for the city's wards. This Committee had its origin in the suggestion of a philanthropically inclined woman and the means supplied for its support come from the hands of the generous givers, and

not from the city coffers. The work of this Committee, because of the lack of proper institutions provided by the city for the care of tuberculous individuals, is carried on largely in the homes and lodging houses where these people are found, and this work is, of necessity, largely among the advanced cases for whom humanity demands the treatment refused by the city. But few of the incipient cases come under the care of this Committee, and this illustrates the lack of early diagnosis in this type of cases.

If Minneapolis is doing little in the care of the tuberculous, the other two cities referred to are doing even less, for in neither one is there any organization similar to the Anti-Tuberculosis Committee connected with the Minneapolis Associated Charities.

In connection with the work of this Committee, the visiting nurse is most important, for it is she who visits the tuberculous in their homes, directs them in the care of the disease, and in the protection of others. The character of the work done by this Committee illustrates what might be done in every county of the state with district nurses assisting physicians. It is hard to classify this work when comparing it with the sanatorial care of the tuberculous. It certainly cannot be considered as of secondary importance, for it not only makes it possible to keep under observation those who have returned from the sanatorium, but it has a far-reaching educational influence in overcoming the apathy and prejudice of those who are not familiar with the most recent knowledge pertaining to the care of the tuberculous.

There is still another feature in the care of the tuberculous that is deserving of considerable attention. I refer to its sanitary supervision. This calls first for the reporting of all recognized cases of tuberculosis to some responsible sanitary authority. The importance of sanitary supervision is illustrated by the results in New York City. As early as 1888 Dr. H. M. Biggs urged upon that city the importance of the sanitary control of tuberculosis. No action was taken, however, until 1893 when Dr. Biggs again brought the matter before the City Board of Health and urged that physicians and others be required to report all the tuberculous in the city. The plan adopted at that time included in part compulsory and in part voluntary notification and registration of all cases, supplemented by visitation and instruction of the sick, inspection, disinfection, and renovation of the infected premises, together with free bacteriological examination of the sputum from suspected cases. This plan was made more thorough, under further suggestions from Dr. Biggs, in 1897. As a result of the excellent work carried out along these lines in New York City the death-rate from tuberculosis has been reduced at least 35 per cent. If this marked im-

provement was possible in New York City during a period of twelve years dealing largely with a tenement population, housed under the most unfavorable conditions, it should be possible for the people of Minnesota, dealing with an intelligent, urban and rural population, well housed as compared with New York City, and with the advantage of sanatorial treatment—state or local, or both—to accomplish an immense amount of good during the next decade.

The good work in New York City was carried on under a system that required—

1. Registration of the tuberculous.
2. Inspection of the homes and surroundings of the tuberculous.
3. Care of the tuberculous poor.
4. Disinfection of the homes of the tuberculous.

All of these are essential, and with the early diagnosis of the disease should go far towards its control.

The Executive Committee of the Minnesota State Board of Health, at its meeting Jan. 9, 1904, prepared the following recommendation:

"That the State Board of Health require the reporting of all case of tuberculosis throughout the state to it, and, further, that a conference of state health officials (and others who may be interested) be called at some convenient opportunity to discuss with the Executive Committee of the State Board of Health the advisability of—

(a) A census to be taken by the physicians of the state on a given day of all tuberculous under their care;

(b) A method of reporting all tuberculous cases to the State Board of Health;

(c) The use of the state and municipal laboratories in the diagnosis and sanitary regulation of tuberculosis;

(d) The distribution of literature relating to tuberculosis, its dangers, and the possibility of recovery."

The State Board, at its meeting on Jan. 12, 1904, discussed the above propositions, and also gave much thought to the question as to whether reports should be sent directly to the State Board of Health or first to the local board, it in turn reporting to the State Board. The general sentiment seemed to be in favor of having the attending physician report directly to the State Board of Health. After this subject had been thoroughly discussed a motion was presented to the effect that "all correspondence dealing with tuberculosis should be between the attending physician and the State Board of Health, and that literature should be furnished to physicians for distribution to the tuberculous patients or to members of their families. Further, that if any local board of health chooses to require the reporting of tuberculosis within its jurisdiction, such action would

be interpreted as being in harmony with the State Board of Health, the local board reporting to the State Board."

Provision has also been made by the State Board of Health for the free examination of sputum from suspected tubercular cases, provided that the information given be used in the sanitary supervision of the case and not simply as a laboratory aid in the diagnosis of the disease.

To make a success of the plans outlined above, the State Board of Health must have the support of the physicians and citizens of the state, and if it has such support there is no reason why the death-rate from tuberculosis in Minnesota should not within a few years be reduced at least fifty per cent. Shall we not all work together to bring about such a result?

FOR DISCUSSION SEE PAGE 95

SANATORIAL CARE OF TUBERCULOSIS

BY H. LONGSTREET TAYLOR, M. D.

Chairman of the Minnesota State Tuberculosis Commission

ST. PAUL

A most interesting chapter in the history of medicine is that which deals with the varying views of the profession in regard to the treatment of pulmonary tuberculosis. From the very first records this has consisted more in the giving of medicines than in anything else, and the list of these which have, from period to period, claimed the confidence of the profession, almost passes belief. Remedies have been tried and found useless and discarded, only to be once again taken up to enjoy for the time the favor of the practitioners, but they have always been doomed to the usual fate of favorites in other spheres, and have been dethroned to make a place for some new claimant to popular regard.

The beneficial influence of a good climate upon the course of the disease has practically always been recognized, and through the centuries ever and again some thinker has raised his voice to bear testimony to the value of fresh air in its treatment, or to speculate upon its action. Thus we find the following passage in notes taken from Dr. Rush's lectures by Edward Taylor, in Philadelphia, in 1786: "Violent remedies sometimes succeed in the cure of this disease, such as the cold bath. * * * The hardships of a military life likewise have the same good effect; this is contrary to all our theories of the disease, but several facts of this kind have occurred within my knowledge. The Indians, we find, do not know nor

experience any such disease as cold or catarrh unless connected with or conformed to our manner of living, and those instances of cure from this savage method of living can only be accounted for by supposing that it gives tone to the system sufficient to guard against the effects of colds, and thereby overcome the disease; whether this be the case I cannot tell, but such are the facts."

These were but sporadic instances, and the treatment of the disease continued to be by the administration of drugs, the application of blisters, the production of issues, and by blood-lettings and purgings, even into the last century.

About the fourth decade of the 19th century Dr. Bodington, in England, advocated the open-air treatment. In order to give his patients the benefit of it, he cared for them in his country house. But he was not able to impress the profession with the truth of his statements, and his teachings fell upon deaf ears.

Dr. Henry MacCormac, a few years later, was also an apostle of the faith in fresh air, which has in later years triumphed. To Brehmer is due the credit of having grasped the significance of the fresh-air cure and of having formulated the rules for its application, much as we find them in use to-day. He founded at Gorbisdorf, in Silesia, the first institution of the kind in the world, the half-century of the existence of which was celebrated a year ago. He lived to see his ideas taking root, but not to see the complete victory which the sanatorium methods have won over the old drugging system. In short, the sanatorium treatment has taught us that tuberculosis is not a disease that can be successfully treated with drugs. From the same source we have learned that a change of climate is not of itself sufficient to cure the disease. A change of climate is the *most* important thing in the minds of the laity and of many members of the profession. It is not the change of climate, *per se*, that accomplishes much. It is often very valuable, because the change takes the patient away from his customary routine of work, and because it is usually made to a climate that invites an out-of-door existence. But the sanatorium treatment has taught us that the requisite thing is an out-of-door existence, and that it can be adopted near the home of the patient, even in a theoretically bad climate, if it is followed out to the letter. The one great factor is an out-of-door existence, and the air of one climate contains much the same amount of oxygen as that of another. We have also learned that patients do particularly well in cold weather, and that to send them to warm climates, except for cases who cannot become accustomed to inhale cold air without the production of a cough, is a mistake. For instance, Dr. Bowditch secures excellent results at the Sharon Sanatorium, a few miles from Boston.

The record of the Massachusetts State Sanatorium is a very good one. The severe winters of the Catskills, the Adirondacks, or of Gravenhurst, in Ontario, are regarded as better for the patients than the summers in the institutions located in those places.

Treatment in a sanatorium is far more satisfactory than to attempt to carry out the same regulations in the home, which must be adapted primarily to the comforts of the majority of the members of the family who are well. The necessary professional oversight cannot be maintained in the home, and it is only in rare instances that the instructions of the physician are carried out to the letter. The educational value of a residence in a sanatorium of only a month is invaluable to an intelligent patient, who can then often be allowed to continue the regimen at home.

The principles of sanatorium treatment are very simple, and are mainly controlled by carefully kept temperature and pulse observations. When first admitted to a sanatorium the patient should be put to bed. This is to give the physician an opportunity to see what the temperature curve and the pulse-rate of the patient are uninfluenced by exercise, and to give the patient an opportunity to become gradually accustomed to exposure to the outside air, which is especially important during the cold months. There is usually some fever for the first few days, due to the effects of the journey and the mental condition of the patient, which the rest in bed soon overcomes. After this the morning temperature determines whether the patient should be kept in bed for that day or allowed to occupy a chair or lounge upon the porch. When the temperature does not contraindicate a certain amount of exercise, the rapid pulse-rate may do so. If the exercise allowed is too much for the patient, the temperature and pulse at once notify the physician to restrict it. If the temperature goes up during the day the patient is sent to bed, which is the remedy, par excellence, for fever. When not contraindicated, six to eight hours a day are to be passed in the open air.

The patients soon observe the beneficial effects of this out-of-door life in the diminution of their cough, increase of appetite, and better sleep. The cold sponge bath every morning and brisk rub keep the skin in good condition, and are often all that is necessary to control night sweats. An alcohol or vinegar rub at night will soon put a stop to the night sweats, if the cold bath fails to do so.

A slight elevation of the temperature in the morning, even if only a tenth of a degree or so above ninety-nine, is sufficient to indicate that the patient will in all probability have considerably more temperature during the day unless some measure be adopted to control it. As stated be-

fore, the bed is the best corrective, and half a day or a day spent in bed will probably be all-sufficient.

In the afternoon a temperature below 100° may be disregarded, except that the patient should not take a walk or indulge in any sort of exercise. But a temperature of 101° should always mean the bed, and if much higher an ice-bag may advantageously be placed over the heart. This lowers the pulse-rate, and brings down the temperature. A patient whose temperature is sub-normal in the morning, and who has a sharp rise in the afternoon should not be allowed to exercise or to be much out of bed. This usually indicates a mixed infection and an unfavorable prognosis, although such cases sometimes improve to an astonishing degree after weeks of enforced rest and careful feeding.

The diet of the patient can be accurately controlled in an institution. The importance of this is readily understood in a disease in which malnutrition plays such an important role. It should consist of such articles as fats, which the butcher and dairy usually provide, but the palate of the patient cannot be ignored, and vegetables and fruits must be added. Lunches of milk and eggs, or sandwiches with beer or coca, should be provided between meals.

The stuffing of the patient with food beyond the demands of the appetite may result in putting on weight, which is usually only fat and very unstable, or it may upset the digestive organs of the patient, and thus defeat its own object. Three good meals a day, with lunches for those whose appetite is readily satisfied and who do not eat well, should be sufficient.

Exercise can well be dispensed with at the outset of the treatment. When the patient is free of fever a certain amount of exercise should be allowed, but never to the point of fatigue, and not if it is followed by a rise of temperature that does not go down very promptly. Walking is probably the best exercise for these patients, and one that admits of many variations in degree, from a short, quiet stroll on the level, to a long fast walk up a hill. There is nothing more injurious than indiscriminate exercise without regard to the condition of the respiratory and circulatory organs, and many a man has walked himself to death thinking that by adding a mile a day to his walk he was growing stronger in the same proportion that the exercise was lengthened.

The care and management of the patients rendered possible by the life in a sanatorium is the most successful treatment of tuberculosis known to-day.

The patient must be convinced, by enthusiasm and confidence of the physician, of the ultimate success of the plan of treatment, and must be a willing ally, and not a "doubting Thomas,"

since to carry out for months the very strenuous efforts to regain strength and health which this treatment presupposes, requires, on the part of the patient, a determination to succeed, with willingness to sacrifice present comfort and ease for future rewards, and, on the part of the physician, the ability to inspire confidence, courage, patience, and determination. The physician must be prepared to sustain the spirits of the patient through all sorts and kinds of discouragements, and to inspire him with the necessary mental stimulus to keep him from faltering or returning to his former bad habits in a hygienic sense. This ability to obtain and perpetuate a control over his patients, to be able to manage their lives in every detail, is the first requisite of the successful phthisiotherapist, and is an important element in the ultimate outcome of any given case.

The treatment in a sanatorium may, of course, include any therapeutic measures that the director has confidence in, and these measures will prove all the more efficacious on account of the management which the physician can exercise over the daily lives of those under his control. Some patients do much better if given a placebo, for instance, than if they are allowed to brood over the fact that they are not getting any medication at all. Any complication that arises can be immediately taken in hand, a decided advantage over the usual delay that is very apt to occur if the patient be at home.

What can be expected of sanatorial treatment? The sanatorium stands to-day as the most powerful aid in the crusade against consumption. It saves lives. So great has been experience with this method of treatment that we can say that with it some eighty to ninety per cent of the incipient cases treated, will return to their homes able to take up their work where they were forced to put it down. Largely because they are compelled to return to the same environment in which they broke down the first time, a large percentage of them will relapse. But a second visit to a sanatorium will rescue many of these relapsed cases, so that between sixty and seventy per cent will probably remain well. Unfortunately, it is almost impossible to induce many incipient cases to realize their danger and to get them to make necessary sacrifices entailed by leaving home and work, and taking up a residence of several months in a sanatorium. Consequently they continue work until they have become moderately advanced cases. Of such cases not more than thirty per cent can be permanently cured.

The sanatorium prevents the spread of the disease. It does this by segregating a number of cases whose expectoration is full of tubercle bacilli, and who would have infected many homes, workshops, offices, etc., if they had remained at their work and thus spread the disease. When

they leave the sanatorium they have had such education in the proper disposal of their sputum, and in many other things that they have been taught to be safe inmates of their homes. A clean consumptive, in the hygienic sense, is a harmless inmate of any house. Thus house infection is lessened, and here also the spread of the disease is curtailed. In this sense house infection is meant to embrace all buildings, offices, factories, stores, etc., for it is in buildings that the tubercle bacillus is best protected against its enemies, sunshine, fresh air, and water, and where it preserves its virulence longer than anywhere else outside of the living host.

The sanatorium is a great educator. It not only sends forth its discharged patients thoroughly trained in the proper disposal of their sputum, but it has taught them the value of fresh air, and it has demonstrated to them that they can live in well ventilated rooms, with windows open day and night without catching cold. It has taught them the joy of breathing pure air, and very few of them can thereafter accustom themselves to close and stuffy apartments. It has taught them the hygienic value of baths, and that, with the aid of fresh air and cold water, colds can be effectually banished. Thus, in the crusade against tuberculosis, the sanatorium may be regarded as a college that sends forth its graduates to spread its teachings all over the land. As a rule, these graduates never tire of telling how much the simple methods of the modern sanatorium have done for them, and with the proverbial zeal of the convert they want every one to be convinced of the truth of the doctrine they preach.

The sanatorium lessens the cost of caring for the tuberculous. It does this by shortening the average length of time of disability. The charitable feature of most of these institutions makes it possible for the poor to enjoy their benefits, and saves the family in such cases from utter financial ruin, the usual legacy of a case of consumption. It lessens both the physical and mental suffering of the poor man, possibly the bread-winner of a large family, when he finds himself face to face with the grim monster, consumption. The sanatorium takes him in, and in the effort to restore him to health gives him hope for the future, while his family is able to take care of itself during the months necessary for his treatment. Without the aid of a sanatorium he would struggle on until no longer able to work, and thus effectually end all chances for his recovery. If the state puts money into sanatoria it is a paying investment in the lives saved of workers and wealth-producers. The laborers' insurance companies of Germany find it profitable to care for their risks when stricken down with tuberculosis, and they have erected at an expenditure of enormous sums of money most of the sanatoria in Germany. If

they do this as a wise business venture, then every state and municipality cannot afford to neglect such means of reducing the death-rate, shortening the amount of disability caused by this disease, and saving workers and wealth-producers from unnecessary and untimely deaths.

At the recent tuberculosis exposition in Baltimore the following terse saying of Dr. Pryor was one of the prominent mottoes, and it points this recital so aptly that it makes a most appropriate ending:

"We must care for the consumptive in the right place, in the right way, and at the right time, until he is cured; instead of, as now, in the wrong place, in the wrong way, and at the wrong time, until he is dead."

DISCUSSION OF THE TWO PRECEDING PAPERS

DR. G. S. WATTAM (Warren): I will say that I am not on the program of my own volition to discuss Dr. Head's paper on the "Dispensary Care of Pulmonary Tuberculosis." I wish to say personally that I have had no practical experience with the dispensary, and I would not undertake a criticism of the most excellent paper Dr. Head has presented here today. I think there can be no two opinions of the value of the dispensary in the treatment and care of this disease. This community is certainly fortunate in having in their vicinity a free dispensary for the treatment of this disease.

It seems to me there are many factors in the care of the tuberculous patient, of the poor tuberculous, where the dispensary is nearly indispensable. One important feature is the making of an early diagnosis. The tuberculin test is certainly one of the most important factors we have in making an early diagnosis, but this test cannot be carried out intelligently unless we have trained assistants, unless we have

nurses or somebody whom we can rely upon to take the temperature at different stages during the day and also take the pulse.

I believe if there is anything to be said in regard to the papers of Dr. Head and others it should be to re-impress the desirability of early diagnosis, and it has seemed to me in the few years past that the pulse is a very important feature in leading us at least to the suspicion of a threatening case of tuberculosis, even before germs have been developed in the sputum and before consolidation can be outlined in the lungs. A pulse that is easily accelerated under moderate exercise, and also a temperature that is somewhat increased under the same conditions, I believe should excite our suspicion even before we can find tubercular bacilli in the sputum or consolidation in the lungs.

I believe Dr. Head has covered almost every other feature that would naturally come under the head of the dispensary care of tuberculosis, therefore I will not consume time by unnecessary discussion.

DR. H. L. TAYLOR (Essayist): I arise to offer my sympathy to the unfortunate rich. At least one of them that we read about a great deal in the papers of the day is having no end of trouble in giving away his money, and here is Dr. Greene not willing to allow them the advantages of sanatorium treatment. I think it is too bad that if there is anything good enough for the poor, the rich should be debarred from it. I cannot see why if there is anything that is good for the poor man the same thing should not be good for the rich man. I do not see why the rich man should be turned loose to do himself harm. He is in need of advice and guidance, and when he is left almost entirely to his own free will you may expect the commission of all sorts of errors.

I have been engaged in the treatment of tuberculosis too many years not to know that it takes more than ordinary common sense in patients to get them to believe that it is necessary for them to take all the precautions they have to take if they are going to recover from the disease, and they have not many chances to risk on the throw of the dice. I am firmly convinced of the necessity of continual care and supervision of patients suffering with this disease, whether they be rich or poor.

THE PRESCRIBING PHYSICIAN AND HIS MATERIA MEDICA*

By W. S. FULLERTON, M. D.

ST. PAUL

A personal investigation of six of our representative drug-stores disclosed the fact that over 20 per cent of the current prescriptions on file are for proprietary medicines of unknown composition, i. e., unknown beyond the published partial formula and the statements of the manufacturer. This means, stated in another way, that the equivalent of one in five of St. Paul's prescribing physicians is an unsalaried employe of the proprietary medicine industry, actively en-

gaged in distributing its products. In the drug-store with which I am most intimately associated, I counted over seventy different proprietaries, carried in stock to meet an artificial demand created through advertising and sampling among physicians. In another store I was shown a stock fully as large, which was kept for current use. Then I was taken down cellar to a well-stocked overflow room which was a veritable receiving vault. Here among the dead I found back numbers which we have not heard of for years, the bottles representing them having con-

*Read before the Ramsey County Medical Society, November 27, 1905.

tributed to the filling of one or two prescriptions before being consigned to oblivion. This condition exists in every drug-store on this continent, and we are responsible for it.

Physicians should not need to be reminded of the methods of these proprietary medicine makers in using the profession to exploit their goods. We have only to look over the not very distant past and recall how many of the proprietaries which we helped to introduce to our patients in precisely the way we are doing to-day, so-called ethical proprietaries advertised to the profession only, are now advertised in the lay press, and sold directly to the public through our endorsement. We have been the means, in the past as in the present, of making certain widely prescribed proprietaries counter commodities in the drug-store, where they are sold every day without our aid or control. If you are inclined to doubt this, spend a little time in any drug-store in this city, and take note of the self-prescribing, and the call for and the sale of these wares. Do not blame the druggist for this. He is there to sell what we and the public demand. Neither blame the public for being apt to learn the lessons we teach. We are doing our best to spread the gospel of self-medication made easy.

How often do you suppose we will have to prescribe some proprietary antiseptic "gargle or inhalant" in the "original package" (you must be sure to do this to avoid substitution—the name is blown in the bottle) before a particular patient will fancy himself able to do without our services in cases which he thinks need such treatment? How long before he catches on to the fact that he can get the same tonic the doctor uses, by calling for a bottle of the prescribed proprietary, just as he would for any other "patent" medicine? And so on down the line.

You who have helped to build up this class of proprietaries; how much of an interest do you hold in the wealth you have helped them to accumulate? You have just the same interest in their millions that the ass in the fable had in the gold which he bore as a burden, and, to speak plainly, you have shown the same degree of intelligence. Nay, you are even worse, for the donkey yielded his services under compulsion, not being a free agent, but at that he was fed and cared for by his master. You get, as your reward, what? The 7x9 picture-card with the mild-eyed sister of charity, and the painted Indian in the flowing war-bonnet beautifully depicted thereon, or a few red, gray, and olive-green blotters to remind you of the masters you serve,—baubles to please a child or tickle the fancies of the untutored savage.

If any of these proprietors should come to you with a direct offer of commissions on the

sales you make, you would perhaps feel insulted. It would be unethical to accept such a proposition. Your patient pays you for your services, you might say. I cannot help feeling, however, that it is a sound business principle that the party to whom the service is rendered should pay.

You may claim, as your justification for using these preparations, more definite composition, superior purity, greater palatability, increased power to cope with disease, and all such specious arguments, which have been instilled into you by the assiduous drummer. The ardor with which you advance these claims will be proportionate to the degree of credulity with which you receive manufacturers' statements. A careful investigation will show that such claims are untenable.

I found in my investigations three very widely prescribed proprietaries, and without being partial in my antipathies, let us consider briefly their merits. They are Antikamnia, Antiphlogistine, and Gray's Glycerine Tonic Comp. Antikamnia, according to the official report of the Committee on Chemistry made to the Council of Pharmacy and Chemistry of the A. M. A., published in the Journal June 3, 1905, p. 1791, consists of acetanilid 68, caffeine 5, citric acid 5, sodium bicarb, 20 parts. It is simply a mechanical mixture, and as "Antikamnia" costs the druggist \$1.00 per oz. in oz. packages as against about four cents when prescribed as pulv. acetanilid co., U. S. P., 1905, and put up by him. The medicinal value of each ingredient is well known, and in the face of this knowledge the claims made for Antikamnia are absurd. The formula was exposed years ago, yet in spite of this the medical profession has continued to prescribe "AK," and to enrich the proprietors at the expense of their patients and the druggists.

Antiphlogistine is a type of the clay poultice which has come into vogue through advertising. A series of very careful experiments was recently made at the University of Michigan by Dr. Augustus H. Roth to test the truth of the claims made for these preparations. The results are set forth in a paper published in the Journal of the A. M. A., April 15, 1905, p. 1185. The claims were proven false, and the clay poultice was found to be inferior to the old-fashioned flax seed, the gauze pad, and the cotton-batting jacket. Those, however, who wish to use it can do so by prescribing cataplasma kaolini, U. S. P. 1905, with equal advantage and less cost. Dr. Roth closes his paper by a quotation from an article by Dr. Dock, which I cannot do better than repeat in part: "Within a short time the poultice has been revived in a new form under the stimulating influence of printer's ink and an amount of physiologic and therapeutic misinformation

that would make Rabelais laugh, but must make all judicious therapeutists grieve."

"Gray's Glycerine Tonic Comp." is a ready-made prescription persistently advertised to physicians, and, to our shame be it said, freely prescribed. It has absolutely no merit beyond that of the simple bitters, the phosphoric acid, and the sherry wine it is said to contain, and these are present in very small quantities, yet you would think, from its literature, that it was the crowning therapeutic discovery of the century. The veriest tyro in medicine should be able to write such a prescription, and it certainly calls for no special skill in compounding. Here, for example, is a prescription which will present as elegant an appearance, is equally palatable, and is probably more effective, and costs the druggist for ingredients, bottle included, 25 cents per lb., while for the Purdue Frederick Co.'s article he has to pay 75 cents.

Tr. gentian. co.....	5	iv.
Fl. ext. taraxaci.....	5	ii.
Acid phosphoric dil.....	5	iv.
Elix. aromat.....	5	i.
Vini xerici.....	5	i.
Glycerin.....q. s. ad.	5	iv.

Mix the first five ingredients and filter; then add the glycerin.

Dose—Teaspoonful to a tablespoonful.

It is unnecessary to take up time with further examples. The illustrations given fairly represent the merits and methods of the whole line of proprietaries.

It would almost seem that with our other failings we were guilty of disloyalty to our home city and our local pharmacists, and would rather help build patent medicine blocks in foreign towns than see them make the reasonable profits which are their right.

A few words on the ethical side of the question. Our code declares unethical the patenting of a splint or any surgical appliance whereby the cost of alleviating suffering might be enhanced to the patient, and made a great burden upon, or possibly placed beyond attainment by, the poor. Neither are we justified in keeping secret any method or medicine which has been found useful in treating disease. No one can deny the broad humanity of this sentiment. Upon what ground, then, can we justify an act on the part of a physician whereby a patient is compelled to pay 100 per cent more than is necessary for the medicine he needs in time of sickness, and which at the same time boosts a nostrum? Now this act, which is no less than criminal, is just what the profession of St. Paul, to the extent of 20 per cent, is guilty of, not wilfully I believe, but thoughtlessly.

The remedy for this condition is very simple,

and is in our own hands. Stop prescribing proprietaries. I should dislike very much to think that any member of this Society would be placed *hors de combat* by such a course.

The basis of our reform must be a more intimate knowledge of materia medica, a better understanding of drugs and their actions. More time should be given in our colleges to the teaching of this branch and the art of prescription-writing. The products of the U. S. P. and the N. F. should be familiar to every graduate; and the ethical side of the proprietary-medicine evil should be discussed in the lecture-room.

The teachers of materia medica and therapeutics in the medical colleges of the regular school are driving the younger branch of the profession into the hands of the manufacturing pharmacists, good, bad, and indifferent. The recent graduate comes on the stage well equipped as a pathologist and bacteriologist, a good anatomist, and a passable diagnostician. He has imbibed the idea that a correct diagnosis is the all-important aim of his examination in a given case. Treatment, outside of surgical measures, he is apt to look upon as a secondary matter. He devotes time and the most exacting pains to the blood count, the bacteriological examinations, urinalysis, etc., at too great a disregard possibly of the coarser clinical picture, forgetting that the patient is more interested in relief from his suffering than in a refined diagnosis; and when it comes to medicinal treatment not one in ten knows the value of drugs nor how to write a prescription, because he has not been taught. He is left to get this knowledge as best he may, and a large part of it from the advertising literature of the proprietary-medicine manufacturer.

Our profession is to-day, in this particular, the laughing-stock of the druggist, the manufacturing pharmacist, and the sample man. If our ignorance, our carelessness, and our gullibility were not notorious among the representatives of the trade, do you suppose we should be approached as we are with the cock-sure sang froid of the traveling man, who unloads his samples to the accompaniment of the parrot-like lecture put into his mouth by the house he travels for? It is only within the last week that we of this city have been sampled by one of our most reputable manufacturing pharmaceutical houses, Wyeth & Bro., with a ready-made prescription for a simple eyewater, "Collyrium-Wyeth," which is an insult to our intelligence, and shows to what a pass this practice is being carried by men emboldened by the existence of the condition I have depicted. Is it not time that we aroused from our lethargy?

Where shall reform begin? So far as we of St. Paul are concerned I would answer, right here

in this Society. Individually and collectively our attitude toward this evil must be one of intelligent and dignified antagonism. We must resent the usurpation of our professional prerogatives by these people who deluge us with ready-made prescriptions. No physician should write a prescription without a definite object in view, the result of careful study of the case in hand. Ready-made prescriptions are like ready-made clothes, too much trying on before you get a fit. Make your prescription to measure. Hand-me-downs have no place in our class.

The standard drugs which we need to combat

disease with are really very few. These few thoroughly studied in their actions, and utilities, are better than a million of pretty, colored things touched butterfly fashion. Make yourselves acquainted with the possibilities of the National Formulary and the capabilities of our own local pharmacists, and you need not lack elegance and palatability in the medicines which you order for your patients.

Finally, I hope that this branch of our art will receive due attention in the course of study which this society proposes to institute in its special meetings.

VARIOUS LABORATORY METHODS EMPLOYED IN VIENNA CLINICS*

BY W. F. BRAASCH, B. S., M. D.

MINNEAPOLIS

In considering the above subject the limitations of time and space will admit of but a superficial glance at the more important and unusual laboratory methods employed in the Vienna clinics. I will further confine myself to those used in the Clinic Neusser by that exponent of laboratory methods, Docent Schmidt. Their importance is emphasized because of the fact that all of these methods are continually being employed in the wards, and are regarded as very necessary to a diagnosis. The various methods here considered will be those employed in the examination of sputum, stomach-contents, feces, and urine.

SPUTUM

I. *Bacteria*.—In examining the sputum for bacteria a fresh specimen is stained and examined microscopically, which suffices ordinarily. In doubtful cases cultures and inoculations are resorted to. The patient's mouth first being washed he is instructed to wait until the expectoration is coughed up from the lungs, before placing it in a sterile Petri dish.

1. *Bacillus Influnzæ*.—The number of cases in which this bacillus was found as an etiological factor is startling. Numerous cases diagnosed as chronic bronchitis, asthma, pertussis, and bronchiectasis, were demonstrated as infections of bacillus influenzae.

2. *Bacillus Coli Communis*.—Though not frequently found in sputum, yet when present suggests (a) presence of cavernous form of pulmonary tuberculosis. (b) possible bronchiectasis, (c) possible gangrene of lung.

3. *Diplococcus Pneumoniae*.—Its presence in cases of pneumonia always sought for.

II. *Eosinophiles*.—Can readily be recognized in the sputum, after fixing with methyl-alcohol and staining with eosin. They are found (a) in asthma in at least 60 per cent; (b) seldom in pulmonary tuberculosis, but if so the prognosis is good.

III. *Crystals*.—Charcot crystals when found in sputum are indicative of (a) ulcerative and abscess conditions, and (b) asthma when together with eosinophiles.

IV. *Potassium Sulphocyanide*.—Recently Docent Schmidt has been following a large series of cases of malignant tumors in the alimentary canal, with the result that he found that potassium sulphocyanide was absent in a large percentage of cases.

STOMACH-CONTENTS

I. *Boas-Oppler Bacillus*.—The importance of the microscopic examination of the stomach-contents has been emphasized by the investigations of Schmidt. His clinical experience has demonstrated that the presence of the Boas-Oppler bacillus in the stomach-contents is strongly indicative of malignancy. He goes so far as to claim that the Boas-Oppler bacillus, when found in considerable numbers and when morphologically in long threads, indicates a malignant condition in the stomach in 98 per cent of cases.

1. *Preparation*.—In examining the stomach-contents for the bacillus, it is well to instruct the patient to eat a ham-sandwich with a liberal amount of sugar on the night before the Ewald test-breakfast is given. The sugar is given because a sugar medium is the most favorable one for the development of the bacillus. The ham is given in order to observe the stomach motile

*Read before the Minneapolis Medical Club.

power. A piece of mucus is carefully selected for examination from the stomach-contents. This is thoroughly teased in a fresh Lugol solution, and examined with immersion lens.

2. *Staining Characteristics*.—The Boas-Oppler bacillus does not stain with iodine, and appears under the microscope unstained with slightly greenish tinge. This is a valuable point in differentiation from the organism most similar to it, namely, the leptothrix. The latter is stained a deep blue by the Lugol solution. The Boas-Oppler bacillus is also Gram-positive which is of value in its differentiation from the colon bacillus.

3. *Morphology*.—In its characteristic form the Boas-Oppler bacillus is a long, thin bacillus, usually grouped in chains. Its distinguishing feature is its thinness, however, for it may be of variable length, even as short as the colon bacillus. The leptothrix in contradistinction is a broad bacillus, though it may be of similar length as the Boas-Oppler bacillus.

4. *Cultural Characteristics*.—If microscopic examination leaves a doubt as to the identity of the organism, the Boas-Oppler bacillus may be grown on a two-per-cent dextrose-agar, appearing as very small transparent colonies, which remain so. Under a low-power lens they have a dark center and a light periphery, the latter giving a so-called Medusa-head appearance.

5. *Favorable Conditions*.—Conditions favorable to the Boas-Oppler bacillus are, briefly, (a) reduced motility, (b) reduced amount of hydrochloric acid, (c) a larger quantity of mucus, (d) presence of exudate, detritus, and a small amount of blood, (e) absence of ferments.

II. *Sarcinæ*.—These organisms are of almost equal importance in the stomach-contents for the diagnosis of a benign stenosis. The finding of one or two of them will suffice to make a certain diagnosis. Schmidt has the records of a case which entered the Allgemeine Kränkenhaus with a clear history of a chronic stomach ulcer, and was treated for a benign stenosis, with excellent results. In the stomach-contents sarcinæ were the only organisms found. Three years later with exacerbation of the symptoms the stomach-contents showed a few sarcinæ and a few Boas-Oppler bacilli. In the course of a few months the sarcinæ disappeared from the stomach-contents leaving the Boas-Oppler bacilli present in large numbers. Post-mortem examination revealed a carcinoma of the stomach. The history, clinical picture, and post-mortem examinations would indicate the development of a carcinoma in the scar of a stomach ulcer, which process was faithfully mirrored in the examination of the stomach-contents.

Characteristics.—Sarcinæ appear in the Lugol solution preparation as unstained, with a light-greenish tinge. They are cube-like, and are usual-

ly geometrically arranged, having been likened to a bale of cotton in arrangement. There is another and less frequent form in which they appear as irregular granular bodies. They do not grow on artificial media.

III. *Megastoma Entericum*.—Though infrequently found in the stomach-contents, this organism indicates in 98 per cent of cases a stomach carcinoma (Schmidt) when present. It appears in the fresh preparation as a motile, pear-shaped organism, with two eye-like bodies in the center.

FECES—MISROSCOPIC

I. *Gram-positive Flora*.—The Neusser Clinic is recently endeavoring to demonstrate the importance of the presence of the Gram-positive elements in the stool. They claim that among the clinically comparatively unimportant mass of Gram-negative flora in the feces, the presence of many Gram-positive flora is indicative of pathological intestinal processes. In the latter group recognized as clinically most important are (1) tubercle bacillus, which is quite easily found in selected bits of mucus in the stool; (2) cocci, which when generously present in the feces may indicate (a) purely ulcerative intestinal conditions, (b) carcinoma, (c) streptococcus enteritis as with children, (d) pernicious anemia; (3) spore-containing bacilli, which together with cocci are strongly indicative of ulcerative intestinal conditions; and (4) bacillus butyricus, which appears frequently in large numbers in exulcerative conditions and in enteritis.

II. *Blood*.—

1. *Corpuscles*.—(a) These are more or less decomposed if from the upper intestinal tract, and (b) they appear as shadows if from the lower tract.

2. *Pigment*.—This is frequently found in ulcerative conditions, and appears in small dark-brown yellowish clumps.

3. *Eosinophiles*.—When present in the feces in any appreciable number they signify (a) presence of parasites, such as ancylostoma, and (b) nervous intestinal conditions.

4. *Pus cells*.—When present, pus cells indicate (a) exulcerative conditions and (b) true dysentery.

CHEMICAL

I. *Urobilin*.—In order to ascertain the presence of urobilin in the stool it is necessary to examine the feces chemically. Although it does color the stool when present, nevertheless the character of the food ingested can disguise it completely. Thus a milk-diet can give the stool such a pale color as to lead one to think that urobilin is absent, while, on the other hand, dark meats, fruit skins, etc., can so color the stool as to make it appear as if it contained urobilin.

1. *Method of Examination*.—An alcoholic ex-

tract of, say, a gram of the feces is examined with the spectroscope, and the right side of the spectrum is found absent if urobilin is present.

2. *Significance*.—(a) The permanent absence of urobilin in the feces usually indicates a malignant condition of the bile-tract or adjacent tissues, and (b) reappearance usually indicates catarrhal conditions.

II. *Indol*.—Its absence is peculiarly frequent in tumors of the pancreas.

URINE

I. *Urobilin*.—Since urobilin is not normally present in the urine, it is of even greater importance to look for it than in the feces.

1. *Method of Examination*.—A specimen of fresh urine is examined with the spectroscope, and, as in the feces, the right side of the spectrum is found absent in varying degrees. A quantitative estimation can be made comparatively by computing the amount of dilution necessary to cause the shadow to disappear.

2. *Significance*.—(a) It is frequently found in febrile conditions thus lessening its value in the diagnosis of concomitant conditions. (b) It is always present in internal hemorrhages, such as

cerebral, extra-uterine, and aneurysmal hemorrhages. (c) It is always continually present in malignant hepatic conditions. (d) It is usually and variably present in the hepatic cirrhosis. (e) It may be present in severe intestinal disturbances, as in severe dysentery or in stenosis of the small intestine.

II. *Indican*.—Its increased amount indicates (a) stenosis in the small intestine rather than in the large, and (b) auto-intoxications, which may resemble meningitis.

III. *Skatol-Acetonuria*.—If present from the beginning of disease indicates either (a) auto-intoxication or (b) stenosis of the small intestine.

IV. *Lodipin*.—This combination of iodine and sesame oil is soluble only in alkaline media. This fact is taken advantage of to ascertain stomach-conditions.

1. *Method*.—A tablespoon of lodipin is given orally and an hour later the urine is examined for iodine.

2. *Significance*.—Its absence would indicate (a) motor insufficiency, (b) stenosis of the pylorus, and (c) presence of pancreas or gall-bladder tumor.

CEREBRAL TUMOR—A CASE*

BY W. J. MCCARTHY, M. D.

MADELIA, MINN.

I have to report to you a clinical case, which was followed by a post mortem. The subject was a male, age 34. His family history was negative. In his personal history he gave a record of an attack of meningitis of three or four weeks' duration, with apparent complete recovery, at the age of seven. Aside from this his personal history was negative.

His last sickness dated from an attack of la grippe. I saw him during the last days of March, when he was just recovering from this, but had developed a severe bronchitis. He reported again on April 12th. He had recovered from his bronchitis, but complained of severe headache, which followed his attack of la grippe. Headache was worse on rising in the morning, and almost disappeared in the evening. He was eating well, sleeping well, and working hard. He attributed his headache to constipation and a bad stomach. He was given no medicine at this time, only directed to take laxatives. I did not see him again until May 18th, when I met him on the road. His headache was worse, persisting nearly

the whole day. There was dizziness on stooping or changing suddenly from the lying to the standing posture. He was still working, had a good appetite, and slept well.

On May 31st he came to town. His symptoms were the same, except that he occasionally saw double when making a quick turn of the head, and he had vomited two or three times. Bowels were constipated. Physical examination revealed nothing; the urine was normal; a blood count showed a leucocytosis of 13,000.

I thought his trouble cerebral and probably tubercular meningitis. He was given large doses of iodides, but without result. I saw him at various times until June 19th. His condition remained the same, excepting his sleep was not as sound, and his vomiting was more frequent and cerebral in character. He was confined to his bed most of the time. At this time Dr. Corbett saw him with me. Physical examination was negative. Pupils were normal and both patellar reflexes were present and normal. Dr. Corbett took specimens of the urine, blood, and stomach-contents after a test-meal. He reported all normal, except the blood, which showed a leucocytosis of

*Presented to the Watonwan County Medical Society, December 13, 1905.

12,000. Dr. Corbett made a diagnosis of gastritis, and advised gastric lavage, calomel at bed time, salines in the morning, with stomach tonics and a spare diet. His vomiting stopped promptly, but the other symptoms remained as they were. There was an occasional temperature of 99° or 99.5° or more, but never to exceed 100°. He was up and around, and came to town occasionally. He would have a number of days when he seemed fairly well; then would follow two or three days when his condition was much worse. His vision was more disturbed, and on getting up quickly he found difficulty in walking. At this time his pupils were normal, and I am positive that both patellar reflexes were present.

I decided to send him to Dr. James, and have the fundus of the eye examined, and on August 11th I sent him to Mankato, with the request that Dr. James and Dr. Curran go over the case together.

Dr. Curran reported as follows:

"I saw your very interesting case yesterday evening, with Dr. James. We went over him very carefully, Dr. James examining the eyes and ears, and I the rest of the anatomy. Everything that I examined seemed normal, but Dr. James found enough to account for all his disturbances. Basing my diagnosis and prognosis on what Dr. James tells me, I think there is a tumor, probably sarcoma, in his brain. It cannot be exactly localized, but I am inclined to believe that it is occipital and on the right parietal side of the cerebrum, involving the motor arm area. This, in my opinion, makes it an inoperable case, and the prognosis is bad."

Dr. James reported as follows:

"Your patient came last evening, and in accordance with your wish, I invited Dr. Curran to assist in the examination. We stripped the man, and made a physical examination, which report I will leave to Dr. Curran. After this I examined him in regard to his eyes and the symptoms presented. There were no oculomotor symptoms that could be discovered, though he informed me that he had seen double earlier in his sickness, and had some nausea, which I can easily account for by the double vision, and which was probably reflex. The pupillary reflexes were sluggish, but I did not discover any paralysis. The pupils were equal, and of normal size to all appearance. The visual field not interfered with, but there was some central scotoma not complete. The eye-ground presents a typical picture of advanced neuroretinitis, the optic disk has entirely disappeared so far as its outlines can be discovered, as well as the emergent vessels. The arteries, even in the periphery, can hardly be outlined, and there are several small capillary hemorrhages in both eyes. The veins are en-

larged, and broken in appearance, and there are a good many cholesterine crystals found in different portions of the field. Since beginning this, Dr. Curran has reported that he found no abnormal products in the urine, which he tested for albumin and sugar. He found no evidence of disease of the abdominal or chest organs. When the patient was lying down, we discovered that there was a tremulousness of the left arm and hand that disappeared when he assumed the upright position. There was absence of patellar reflex of the right leg, and a normal reflex of the left. There is very great disturbance of co-ordinate movement of the lower limbs, the patient being unable to walk at all with the eyes shut, or to stand. He falls to the left whenever this is attempted, and there is marked diminution of muscular power of the left hand. His pulse I found was not quite regular, but it was not intermittent, and the temperature was 99.5°.

"One or two things make a positive diagnosis for me rather difficult. The want of any oculomotor symptoms and the absence of any pupillary changes bother me about coming to a positive conclusion. His stomach trouble that he had formerly, and his oculomotor symptoms that he had at that time would account for his nausea and dizziness by reflex cause. While the one has disappeared the other still remains. I am inclined to believe from all that I can discover that the case is one of brain tumor. In the absence of any specific history, I am led to think it probable sarcoma. In the absence of any mental symptom, I am led to exclude meningitis. The possibility of some effusion has occupied my mind, on account of the change or modification of symptoms by position. He tells me he is worse in the morning, when he first gets up, as to his vision, and that he is better after he is up awhile. The effusion, if this is the cause, is the effusion of a growth, I firmly believe. The diagnosis then rests between tubercle, sarcoma, and gumma. The way that the trouble began, dating from grip, if his statement is correct, would lead to miliary tubercle. It is possible that he may have had syphilis and not have known it. The history he gave would exclude this, but I would follow up the matter as carefully as possible, and ascertain if it were among the possibilities. In the absence of either of these, it must be a sarcoma. I believe it is located in the cerebellum, probably at the base."

On August 12th, about thirty-six hours after he was examined by Drs. James and Curran, and without warning, he died.

POST MORTEM

Dr. Curran made the post mortem, and the findings were as follows:

The membranes were deeply injected. There

were old adhesions between the dura and pia mater. The pia was thickened and adherent to the cortex. These were evidently the marks of his former meningitis. There was a beginning of fairly well marked tubercular meningitis. The pia mater where it dipped down into the sulci was studded with miliary tubercles; of how long standing this was I am unable to say, not having had sufficient experience in the post-mortem

room, but it would be my impression that it developed during the last week. The subdural space, or subarachnoidal space, was filled with a clear fluid. In the left cerebellum there was a large cyst which had ruptured into the subarachnoidal space. The capacity of the cyst was about two ounces. The presence of the cyst was evidently the cause of the symptoms during life, and its rupture the cause of death.

CYSTIC TUMORS OF THE IRIS*

BY W. F. CARVER, M. D.

FT. DODGE, IOWA

Cystic tumors of the iris are said to be exceedingly rare. The fact that there is little to be found in medical literature on this subject is due to the very good reason that there is not much to say, which fact entails the brevity, enhances the value, and adds materially to the attractive features of a paper.

I have nothing new to present in this instance, however, I assume that a brief review of the literature, with report of a case, may prove of some practical interest.

Cystic tumors of the iris occur in two forms, serous and dermoid, both of which are quite rare, the serous being the more frequent. They are all lined with epithelium; and what determines the nature of the contents of a cyst in this region, as between the serous and dermoid types, is unknown.

The results of experimentation, as well as the history in most cases, go to prove the traumatic origin of these growths. It is well known that there are no epithelial cells normally in the region of the anterior chamber or the iris, and also that these growths have been produced by introducing living epithelial cells into the anterior chamber. The etiology has accordingly been assigned to a former penetrating injury in the anterior region of the globe, whereby living epithelium is carried into the anterior chamber from the skin surface or margin of the lids, the bulb of a cilium, or the conjunctival or corneal surface, and deposited into the tissue of the iris, where it proliferates, with the result of a cystic formation.

These cysts are of a globular formation, the serous being quite translucent and of very delicate and fragile walls, and the contents clear fluid. The dermoid, looking more pearly or seed-like, are harder, and the contents of a grumous or doughy consistency. Both forms are of rather slow growth. By coming into contact with the posterior surface of the cornea they produce an

indelible white opacity, and extending in a backward direction they tilt the margin of the iris backward, and by pressure sometimes cause cataract. In growing toward the pupillary space they drag the margin of the iris in this direction, and in some cases tear the iris loose at its roots. If neglected intra-ocular tension becomes very much elevated, and the eye destroyed.

These growths are quite easily distinguished from other neoplasms in this region, being innocent and entirely free from irritative phenomena, unless they have attained considerable size.

A history of prior traumatic or operative penetration of the globe can nearly always be elicited, if carefully inquired for. These cysts have been known to follow operations, in which epithelial cells may have been transported into the anterior chamber by means of the surgeon's knife or needle.

The treatment of cysts of the iris is usually very simple. Some of the earlier operators report success from simple puncture through the cornea, but this method was sometimes followed by recurrence and was not applicable to the dermoid variety. An incision with a Graefe cataract knife, with iridectomy and removal of all the debris of the growth, is usually sufficient. It is impossible to make the incision and removal of the cyst entire without collapse of the cyst walls, as this always occurs when making the primary cut.

CASE

I have never seen other than the one case, which, by your indulgence, I will report:

Everett Andrews, a farmer boy, then 11 years old, was brought to me on April 25, 1900, complaining of lowered vision and slight irritative symptoms in the left eye, which was worse at school while working with his books. Vision L. E. 20/40, R. E. 20/20. There was slight ciliary injection at the upper margin of the cornea, about

*Read before the Sioux Valley Medical Association, at Sioux City, Iowa, January 18, 1906.

+ 2 tension, and a globular translucent growth, which extended from the upper angle of the anterior chamber down to, and encroaching on, the pupillary space, and was tilting the upper margin of the iris backward, and by contact with the posterior surface of the cornea, a small white opacity was evident, and can still be seen. Iris was bright, smooth, and free from irritation.

Upon inquiry no history of prior injury could be had, but subsequently others members of the family recalled that about five or six months previously he had come into contact with a broken piece of barb wire while running at play, with the result of a drop or two of blood on his face, the source of which they could not discover, nor did he have any trouble with the eye at that time and at the time of his visit to me there was no

evidence of a scar anywhere about the eye, but it is a well known fact that a very sharp point can enter the anterior chamber at a certain angle without the escape of aqueous humor or resulting irritation of the eye. No scar or other permanent evidence of prior injury remained.

Removal of the growth was advised, and the patient entered the hospital. Under a general anesthetic a small peripheral incision was made with a Graefe knife, and a broad iridectomy was done, prompt healing, without reaction occurring, after which a slight astigmatism was evident for about a year, for which he wore glasses. He now has vision 20/20 without a glass, and no astigmatism. A large coloboma of iris and the contact opacity near the upper margin of cornea are still present.

HOSPITAL BULLETIN

ASBURY HOSPITAL

MINNEAPOLIS

A FRACTURE OF THE UPPER END OF THE HUMERUS

IN THE SERVICE OF DR. ARCH A. E. WILCOX

Fractures of the humerus comprise about eight per cent of all fractures. My own experience shows a slightly lower percentage.

The following case is one of a series of 61 in number, it being the only one treated by the open method.

B. L., male, aged 10, while walking on the top of a four-foot fence, fell; and as he became unconscious almost immediately, he does not remember in what position his arm was when he struck the pile of stones upon which he fell, but it is evident that the fracture was caused by direct violence, as he had been balancing himself by catching hold of branches above his head, and his arm undoubtedly was extended when he started to fall. He was carried to his home by his playmates who said that his arm "dangled by his side."

When seen, a half hour after the accident had occurred, the patient was lying upon his back, the forearm was extended with the arm above his head with the palmar surface upwards, and in this position he said he felt most comfortable.

Aside from decubitus, inspection showed an ecchymotic spot in the outer wall of the axilla, which looked as if it had been the recipient of

the direct force from without which had caused the fracture, or the result of injury from the jagged bone from within.

Bulging below, the clavicle was present and the shoulder seemed more flat than its fellow. The slightest manipulation caused considerable pain, and therefore chloroform was given and the arm examined further. Upon bringing the arm

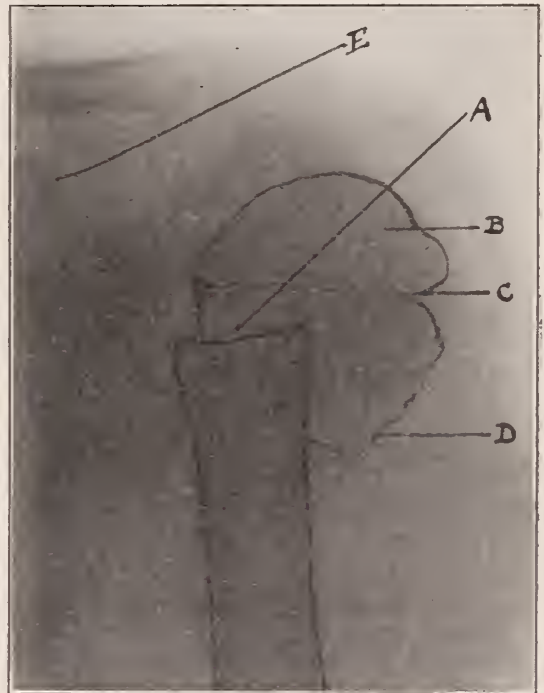


Fig 1 (diagrammatically outlined). A, upper end of lower fragment; B, head of humerus; C, epiphyseal line; D, lower end of fragment; E, coracoid process.

down to the side increased mobility was noted, and the test for dislocation was negative when the hand of the affected side was placed on the opposite shoulder and the elbow placed against the chest; still the shoulder did not seem to have the fullness it should have, providing the head was still in the socket.

Strong extension and counter-extension elicited crepitus, and with the other manifestations a diagnosis of fracture of the surgical neck was made.

Reduction was then attempted by extension and counter-extension with an assistant pulling outward on the lower fragment; however, as soon as these various lines of extension were relieved the deformity recurred, and the case was sent to the hospital for an x-ray diagnosis.

A radiograph was made, and it showed a fracture of the surgical neck, but no dislocation, although at the reading of the plate the remark was passed that the epiphyseal line showed very plainly.



Fig. 2 (three months after accident). Composite photograph showing the arm in five different positions, and demonstrating full restoration of function.

As the radiograph showed that the bones were not in apposition, chloroform was again given and reduction attempted with fairly good results, and retaining dressings were applied, after which another radiograph was made.

This radiograph is reproduced in Fig. 1 the

reading of which discloses a fracture of the surgical neck of the humerus; the upper end of the lower fragment displaced upwards and inwards and over-riding the lower end of the upper fragment, which is outward and upward. The epiphyseal line is very distinct.

After a third unsuccessful attempt at reduction, operation was advised, for the purpose of wiring the fragments together. Under chloroform an incision was made, such as that made for excision of the head of the humerus, about 4 or 5 inches in length over the deltopectoral groove. The cephalic vein was displaced to one side, and the muscle fibers separated until the periosteum was reached. Upon slitting open the periosteum it was found stripped free from the bone for some distance and the cavity filled with clots of blood. The clots were wiped out, and the cavity dried with gauze; then the upper end of the lowest fragment was brought by extension into sight and "delivered" through the wound.

After drilling the upper fragment about one-half inch from its upper end a medium-sized silver wire was passed through the extremity, and the bone replaced in the wound. Upon elevating the lower end of the upper fragment, separation at the epiphyseal line was discovered. The portion of the bone between the epiphyseal line and

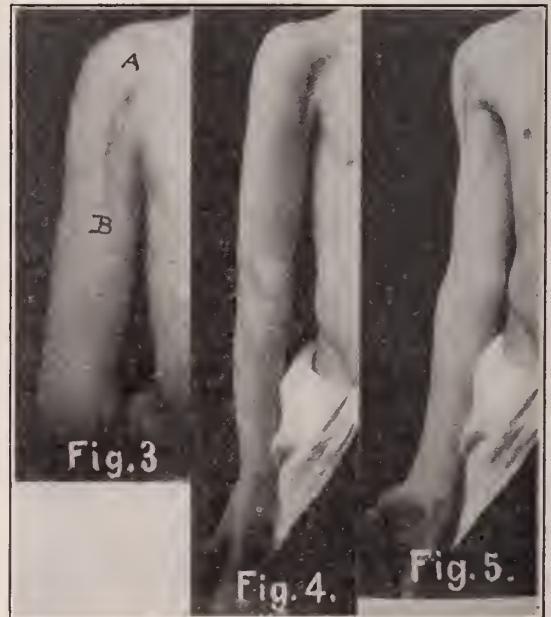


Fig. 3. Appearance of affected arm while at rest. The line of incision is indicated by the position of the scar, A . . B. 4. Complete rotation inward. 5. Complete rotation outward.

the fracture (C and D Fig. 1) was now free within the periosteal sac, and fearing necrosis would take place, it was removed. Above, the head surrounded by the capsular ligament

constituted the upper fragment, its free lower end being the epiphyseal surface. As it was impossible to wire the head to the shaft, the wire already placed in the lower fragment was removed, and the shaft brought into contact with the epiphyseal surface of the head.

There was no tendency to malposition, and the cavity being wiped dry the periosteum was brought over the bones with its muscular insertions, namely, the pectoralis major and the latissimus dorsi anteriorly and the spinatus group posteriorly.

The wound was then closed by deep sutures of silk-worm gut, and the arm was put in ordinary dressing, as for simple fracture of the shaft. The patient remained in bed for several days when a plaster cast was applied. It was worn for about two weeks longer when it was removed, and passive action practiced.

OBSERVATIONS

The value of the *x*-ray in diagnosis of fractures.

The difficulty and impossibility of complete reduction of some fractures in this locality, to say nothing of retaining reduction, when it is accomplished, without resorting to operative measures.

While the portion of the bone removed was in close relation with important muscular attachments the fact that the periosteum was stripped from the bone, including these insertions, and also that function was so completely restored, shows that nature will, if given the opportunity, re-attach such muscles through the medium of the periosteum and newly formed bone tissue.

The question of the future growth of the bone is an interesting one on account of the close relation of the injury to the epiphysis. The arm now measures about three-quarters of an inch less than its fellow, and future growth may be interfered with.

Figs. 4 and 5 show function of rotation, while Fig. 3 shows that normal roundness of the shoulder has been preserved.

The *x*-ray plate is by Dr. Emil Geist; the ingenious photographs are by Sweet Brothers.

CERTAIN TESTS FOR TUBERCULOSIS

The examination for tubercle bacilli in the urine by the ordinary method of staining, is not decisive by any means, even if the bladder has been catheterized and differential stains for smegma bacilli have been employed. Numerous examinations with the aid of these procedures must be made, and even then the diagnosis is only a presumptive one. The only sure test is by injecting a large quantity of the sediment into a guinea-pig.—American Journal of Surgery.

DR. ABBOTT'S PRIVATE HOSPITAL

MINNEAPOLIS.

A NEPHRITIC ABSCESS, WITH UNUSUAL PATHOLOGICAL CONDITIONS*

BY DR. A. W. ABBOTT

Mrs. P., about 25 years of age, mother of two children, the youngest two years old. Was well up to four weeks ago, when she began to notice some pain in the left lumbar region, which has gradually increased in frequency and severity until now, December 15, 1905, the pain at present being at frequent intervals very severe, and her temperature from 100° to 103°, and pulse from 100 to 120.

Physical Examination.—Left kidney large and apparently directly continuous with fluctuating tender mass, bulging laterally, but not deep. Urine about normal in amount and normal in quality. On separating the urine it was found to come entirely from the right kidney, there being absolutely no flow from the left kidney for twenty minutes.

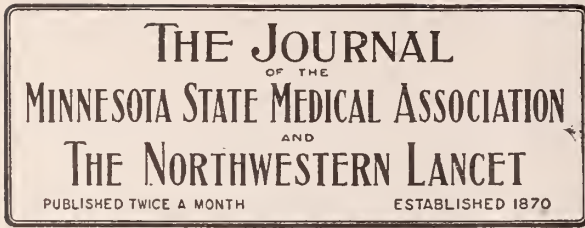
The diagnosis made by Dr. Percy A. Peabody, who had the case, was paranephritic abscess. In view of the fact that there was no urine coming from the involved kidney I was unable to account for this symptom, except on the ground that the ureter must be obstructed, and hence that there was in addition to the paranephritic abscess a pyonephrosis or hydronephrosis.

On opening the loin, and just as the muscles were cut through, there was a gush of pus. The finger passed into a chambered cavity at the bottom of which the kidney could be felt, the finger passing into a ragged lower pole of the organ. Floating in this cavity, and apparently one only and attached by a slight thread, were two roundish masses about an inch in diameter that I supposed at the time to be perirenal fat.

On section they appeared to be much degenerated kidney tissue, quite resembling old interstitial nephritis. There are a very few glomeruli and tubules, the main structure being like old inflamed connective tissue with some areas that look like granular tissue.

How could these masses have been separated from the kidney? They were loose in the abscess cavity when the finger was first inserted, and were not loosened by me. They are certainly originally a part of the kidney.

*Presented before the Minneapolis Pathological Society, January 31, 1905.



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MARCH 1, 1906

THE PHYSICIAN AND HIS PATIENT

When the Hon. Grover Cleveland addressed the New York State Medical Association at its meeting last month he gave its members a bit of good advice.

The practice of medicine is surrounded with mystery and the average practitioner is not accustomed to making a confidant of his patient or the members of the family, all of this Mr. Cleveland considers an unfortunate practice. The patient or his relatives have certain rights in spite of an ancient custom which has no real place in the practice of medicine at this day and age. The old theory that the least information given out by the attending physician the better the patient is pleased, is not satisfactory. A certain type of medical men continue to look wise, shake their heads, and say nothing, and to think that the patient is convinced that the physician knows more than he wishes to communicate, and is assured.

As a matter of fact, the man who assumes such an attitude is neither wise nor knowing: he shakes his head and says nothing because he does not

know what to say, and is trusting to luck and the limitations of disease states to work out the salvation of the patient and his reputation. This method is frequently acquired, or adopted, in order not to be obliged to express an opinion, or to wait for an opportunity to give an opinion when the disease is self-evident in its manifestations. If the people knew how very little the physician actually knew about the special case in its incipiency, and if the physician was frank enough to say that he must study the case and await developments, there would be less distrust and more confidence between physician and patient. As a general rule the people are willing to trust a medical man who earnestly tries to investigate a chain of symptoms, and the trust will be increased if the investigator will take the patient or the family into his confidence and talk the situation over from a proper standpoint. The patient loves a mystery, but he wants to be a party to it even though he is unable to understand it. If the physician is watchful and thorough in his examination, and leaves no methods untried he will find a willing subject for his work. If he is careless, hasty, and superficial in his work some one is sure to discover it. There are physicians who have a certain quality of personality who are unskilled, but are loved by patients and friends. They adapt themselves to emergencies, are ever ready with explanations and opinions which vary from day to day, and yet they retain their standing, insecure as it may be and based only on personality. The time occasionally comes when their superficiality is disclosed, and their patients lose confidence. The majority of them, however, maintain their hold upon the community, and their shortcomings are never revealed. The skilled diagnostician who is trained and qualified to investigate disease may have a personality that is displeasing to his patient, yet his methods are impressive and convincing. His coldness of manner, his apparent unsympathetic bearing is often a stumbling-block to success. If he could acquire the faculty of combining his skill with a pleasing personality, a readiness to explain the essentials of disease, its probable cause and outcome, his success is assured.

The public will stand a certain amount of mannerisms, dignity, and thumping, but each must

be tempered with kindness, confidence, and sympathy in order to make a lasting impression. What an enormous amount of insult, indignity, and abuse the people will stand without a murmur until it is heaped on to the breaking-point, then comes the reaction; the profession is overthrown and the patient rushes into fads and follies. The fault lies, not with the people, but with the profession. The medical school sends out its hosts of graduates who are trained perhaps in the theory of medicine, but are untrained in ethics and common sense and in the practice of medicine, and are incapacitated in those qualities of mind and judgment which make the man and his profession a safeguard and a reliance.

The people can be fooled for a time, but it pays, from every standpoint, to be painstaking, honest, and gentlemanly, and to give the patient or his family credit for ability to detect fairness and to show appreciation of skill and sympathy, and fair-dealing from a commercial point of view.

ACETANILID

The recent disclosures of the Department of Pharmacology of the preparations which contain acetanilid are emphasized in a paper on chronic acetanilid poisoning in the *Journal of the A. M. A.*, by Drs. J. B. Herrick and E. E. Irons.

It is evident that the majority of headache powders, or other headache remedies, contain more or less of this drug in harmful proportions. Every physician has had patients who are addicted to the "bromo" habit, and nearly every physician can recall instances where the amount of such salts consumed is appalling. The wonder is that more patients are not killed or that there are not more published cases of chronic poisoning. If the truth were known there are many confirmed habitués who secretly take these drugs and who suffer from undefined symptoms that do not respond to ordinary care and treatment. If our manufacturing chemists and local pharmacists, as well as the ever-ready prescribing physician, would give us a truthful statement of the quantities sold and prescribed the result would be as startling as the ravages of the liquor traffic.

It has been unofficially stated that thousands of

deaths annually are due to acetanilid-bearing preparations. If this be true physicians should caution laymen and others to absolutely abstain from prescribing or using any preparation that contains acetanilid.

The case reported by Herrick and Irons was unique in that the drug was absorbed from an ulcer of the leg. The woman, aged 50 years, had applied acetanilid to a large chronic varicose ulcer of the leg for seven years. She had all of the symptoms,—nervousness, mental depression, dyspnea, cyanosis, and palpitation. A maniacal excitement followed the suspension of the acetanilid, and a cure was effected by a gradual withdrawal.

The effect upon the urine was very marked, the color varying from a dark-reddish amber to a Bismarck brown, indicating the presence of paramidophenol and an increase of ethereal sulphates.

The continued use of the drug produces blood changes, alterations of the size of the spleen, and a weak heart. The investigators carried on many experiments on animals, and the results were practically those found in human beings.

The use of acetanilid is not confined to neurotics but is found among those who suffer pain from any source. Any patient who suffers from a perplexing anemia, dyspepsia, or neurasthenia should be closely investigated. Transient forms of paralysis, monoplegia, or hemiplegia may follow the continued use of the drug. The same tendency toward concealment or prevarication that is found in the morphine user may be disclosed in the acetanilid habitué. The only safe substitute for this drug is chemically pure phenacetin made by a reputable chemist. Acetanilid can usually be detected by its sharp acrid taste and the dark-colored urine produced by its use.

It is safe to combine any of the coal-tar products with a diffusible stimulant, such as the aromatic spirits of ammonia, and safer still not to use any of them unless their purity is guaranteed.

The Druggist Circular, of New York, gives many valuable hints about drugs and prescribing, as well as the publication of fraudulent preparations that would be of value to the physician. It offers many criticisms that are severe but instructive.

THE LADIES' HOME JOURNAL BILL

The February number of the Ladies' Home Journal is doing more toward the suppression of patent and proprietary preparations than any medical journal in the country. It has published a bill, carefully prepared, which should be introduced into every legislature in the country. Some one must act, and so far this is the first publication to come out for a uniform measure. Wherever it is introduced it will be fought by patent medicine combinations and newspapers which carry patent-medicine advertising. Your representative should understand the situation, and the physicians and local medical societies ought to feel a moral responsibility for the passage of a bill of such importance.

The pure-food bill which recently passed the United States senate, knocked at the door for eighteen years. At this time with all the crusades for reform a "patent-medicine" bill ought to go through if sufficient push can be obtained. The bill may not be perfect, but it will do an immense amount of good. It can be modified to any necessary extent and still allow the manufacturers of articles to sell their wares to those who insist upon buying patented remedies. The printing of the formula and the "poison" label will make the people think more than once before investing and taking.

The bill is not for the benefit of the physicians, but for the good of the public.

Bills to regulate the sale of "patent medicines" are now before the legislatures of Kentucky, Mississippi, and New York.

The honest patent medicine manufacturers are just as anxious as we are to stop deceit and trickery in the sale of remedies.

REPORTS OF SOCIETIES

HENNEPIN COUNTY SOCIETY

The Program Committee of the Hennepin County Medical Society have decided to continue the regular monthly meeting as formerly, with papers of a general nature, suited to the interest of general practitioners, and to utilize the mid-monthly meetings for the presentation of subjects of special interest, even though such subjects

are of a technical nature. At times such subjects may interest only the minority, but the minority have in the past been necessarily neglected, and, as a matter of fact, it is believed that a certain amount of special technical work will be of interest to the majority of the members, including the general practitioners. It is not possible for the busy doctor to keep himself posted in lines of work other than his own by reading or by experimentation. It will be the purpose of such special meetings for specialists in various lines to present before the Society the progress made in such special branches, giving us not necessarily original work, but a resume of the progress in each branch of the original work of others, after having been digested by this expert.

Our county society has many functions to perform, but the most important function is that of a scientific nature—that which enables us to keep posted with the advance in medicine; in other words, to keep our stock in trade replenished.

While in former days it may have been true that the older the practitioner the greater the demand for him, we now know that many young men are succeeding, and that many of the older men are losing their hold. Why is this? In former days experience counted for the most, but now, while experience is extremely valuable, it must be linked with up-to-dateness.

The progress in medicine and surgery has been so rapid that the people demand the most recent product; therefore, to attain and maintain success, young men, and likewise old ones, cannot afford not to be members of medical societies. If one lacks the interest which every physician should have in his practice, and which seems necessary to continued success, and is in practice only for the purpose of making money or a livelihood, even then, purely from the standpoint of dollars and cents, he should belong to and attend medical societies.

It is the intention to make the program of such interest that the attendance will be good, but it is urged that those who have not the interest should attend from a sense of duty. They need it more than those who are interested.

PROGRAM FOR THE REGULAR MONTHLY MEETING,
MARCH 5TH

The Physical Findings in Growth of the Anterior Mediastinum. Soren P. Rees, M. D. Dis-

cussion opened by C. Nootnagel, M. D.

Actinomycosis, with Report of a Case. J. T. Moore, M. D. Discussion opened by Knut Hoegh, M. D.

A Case of Septic Endocarditis, with Necropsy Report. H. L. Staples, M. D.

PROGRAM OF MID-MONTHLY MEETING, MARCH
19TH

Lecture on Tumors of the Breast, illustrated with lantern slides. J. Clark Stewart, M. D., given under the auspices of the Minneapolis Pathological Society.

ANNUAL MEETING, APRIL 2D

Banquet and address by Dr. N. S. Davis, of Chicago. Members of all county and district societies are cordially invited to attend this meeting. Tickets for the banquet, at \$2.00, may be had of Dr. F. C. Todd, chairman of the banquet committee.

C. H. BRADLEY, M. D., Secretary.

MINNEAPOLIS PATHOLOGICAL SO-
CIETY

The monthly meeting of the society was held Feb. 18th, Dr. Rothrock, the president, in the chair.

Dr. W. M. Chowning read a paper on Recent Studies in Rocky Mountain Spotted Fever. Microscopic preparations, photographs, and drawings were submitted, and Dr. Chowning gave in brief the results of his work on 19 cases, covering a period from 1902 to 1905 inclusive. His conclusion from the studies were as follows:

1. The organism described by Wilson and Chowning in 1902 is present in all cases.
2. The organism is not a protozoan.
3. The organism is a fungus, the multiplicity of forms present being due to the fact that many fungi are able to complete life cycles of variable stage lengths.

E. H. BECKMAN, M. D., Secretary.

MISCELLANY

EXCLUSION OF TUBERCULOUS TEACH-
ERS AND CHILDREN FROM
SCHOOLS

The State Board of Health, at its meeting January 9, 1906, took action advising that those suffering from tuberculosis be not employed as teachers—

1. Because they cannot hope to recover while following such an occupation.

2. Because they are a menace to the school children under their care.

That children suffering from tuberculosis be excluded from school—

1. Because their recovery is not probable while they are kept under the strain of school life.

2. Because the importance of fresh air, rest, and good food is even greater for the growing child than for the adult, and the child attending school does not get the necessary amount of any of these.

3. Because close confinement in school may be followed by other forms of tuberculosis than consumption, and may cause permanent deformities or death.

4. Because school children with consumption (pulmonary tuberculosis) are a decided menace to their associates.

5. Because by excluding tuberculous children from school and allowing them to recover, and at the same time preventing the infection of others, many lives of value to the state may be saved.

The Secretary was instructed to send these suggestions to every school board, health officer, and superintendent of city and county schools throughout the state.

NEWS ITEMS

Pembina, N. D., is raising money for a hospital.

Dr. C. H. Johnston has given up practice at Austin.

Dr. John F. Warren, of Leeds, N. D., died last Monday.

Dr. Christian Jelstrup has moved from Vining to Greenbush.

Dr. D. H. Bath has permanently located at Denbigh, N. D.

Dr. J. B. Dunn, of St. Cloud, is visiting the hospitals of Chicago.

Dr. M. C. Johnson has moved from Hope, N. D., to Aberdeen, S. D.

Dr. W. H. Still, of Sioux Falls, S. D., has moved to Wagner, in the same state.

Dr. Samuel Schaefer, a homeopathic graduate of the University of Michigan, has located at Winona.

Dr. W. W. Torrence, who formerly practiced at Deadwood, S. D., died last month in Denver, Colorado.

Dr. D. K. Thyng, of Willow City, N. D., is taking a post-graduate course in surgery in New York City.

Dr. Spicer, a Rush graduate, who has been practicing at Dazey, N. D., is now located at Marion, N. D.

Dr. F. O. Cole, who has been practicing for a couple of years at Tea, S. D., has moved to Lockport, N. Y.

Dr. G. C. Gilbert, who has been practicing in Cass Lake for a year, has been nominated for mayor, and will be elected.

Crookston has raised the required amount to secure the new Bethesda Hospital, and is now assured of the location of the hospital at that place.

It is reported that Dr. J. W. B. Wellcome, Sr., of Sleepy Eye, cannot live much longer. He is probably the oldest pioneer practitioner west of the Mississippi.

Dr. H. C. Stuhr, State University, 1900, now practicing at Argyle, is going to Europe for a year's special work. The citizens of Argyle presented him a gold watch on his departure for Europe.

The City and County Hospital of St. Paul has opened a school for nurses. The hospital takes both public and pay patients, and the large number of patients gives the school ample material at all times.

Dr. O. F. Melby, Hamline, '01, of Warren, has moved to Argyle, and takes up the practice of Dr. Stuhr. The citizens of Warren dismissed him with the presentation of a silver pitcher and tray.

Committees from the Commercial Club of St. Peter are visiting hospitals and seeking information to aid them in the building of the new city hospital for that place, which will cost from \$12,000 to \$15,000.

Dr. Frank Bissell, of Maple Lake, was married last month in Minneapolis to Miss Blanche M. Stanford. Both the bride and groom were State University graduates, and the wedding was made a college affair.

Dr. L. P. Mayer, of Hudson, Wis., a 1900 graduate of the University of Minnesota, has recently been appointed a member of the Wisconsin State Board of Health. He is the youngest man ever appointed on that board. He is 31 years of age.

Dr. Charles D. Foreman, State University, '04, who is in Berlin taking a special course in skin and venereal diseases, has been elected secretary of the Anglo-American Society, which has in its membership all the American and English physicians in Berlin.

It is reported that Dr. N. J. Shields, formerly of Lidgerwood, N. D., passed the highest examination of the 600 applicants who recently took the New York State Board examinations for certificates to practice. Dr. Shields has not fully decided to quit North Dakota.

The fifteenth meeting of the International Medical Congress will be held at Lisbon, April 19-26. Blanks and information about the special steamer which leaves New York April 7th, may be had of Dr. Thos. McDavitt, St. Paul.

Preliminary examinations of applicants to positions as assistant surgeons in the U. S. army, will be held on May 1 and July 31 at the usual places to be hereafter announced. There are at present twenty-five vacancies. Full information may be obtained from the Surgeon-General at Washington, D. C.

No one has, as yet, been able to touch the bottom of public credulity in medical matters, but a company in Grand Forks, N. D., has sent the plummet a little farther down than anybody else. They advertise a medicine that brings the dead (probably the newly dead) to life again, and they publish a testimonial from a woman in California who was restored "after she had been made ready for the grave." The postal authorities are after the company which styles itself the "Force of Life Company."

PRACTICE FOR SALE

A good opening in a village of 530 inhabitants, 30 miles from the Twin Cities, with the nearest physician twelve miles away. Practice will be turned over to the purchaser of my driving outfit, drugs, etc., for \$500. Reason of selling: I am going to the city to practice. Address "M," care of this journal.

PHYSICIAN WANTED

A Norwegian physician is wanted at Lankin, N. D., where the population is mostly Norwegian. For further information address B. B., care of this office.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during the fine season in the delightful city, write for particulars, to New Orleans Polyclinic, P. O. Box 797.

WANTED

To form a partnership, act as assistant, or share office with a physician in a large city in Minnesota, Minneapolis preferred. Have had five years of general experience; age 27; speak Norwegian; will give and expect references. Address N. M., care of this journal.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

VOL. XXVI

MARCH 15, 1906

No. 6

DIAPHRAGMATIC HERNIA, WITH REPORT OF A CASE*

BY WARREN A. DENNIS, M. D.

ST. PAUL

On May 21, 1904, in the afternoon, E. M., a young man of 19, was seized with nausea and vomiting after doing some jumping, followed by swimming for half an hour. The next morning the vomiting continuing, he visited the office of Dr. Charles MacLachlan, of New Rockford, N. D., who found that his temperature was normal, the pulse normal, but small, and the abdomen somewhat retracted and very slightly tender in the epigastrium and left hypochondriac region. Calomel was given, and the next morning enemas were ordered, the first giving a good result, later ones little or none. The vomited matter was watery and bile-stained, but at no time fecal. As the condition remained unimproved, he was sent to St. Paul, where he arrived the following morning, still nauseated and vomiting, but able to walk to a carriage.

Dr. MacLachlan stated in his letter accompanying the patient that eighteen months previously he had received a severe contusion of the left thorax, from the end of a buggy pole, the result of a collision on the road on a dark night. The blow was received about an inch and a half behind the junction of the eighth rib with its cartilage, and, while not penetrating, was of sufficient force to keep the young man confined to his bed for three weeks. It was three months before he felt entirely well.

During the six months preceding the present illness he had had symptoms of indigestion and constipation, and in the six weeks preceding it he had lost about fifteen pounds in weight, which

loss was ascribed by his father to ranche cooking. His appetite was poor in the morning, but good for dinner and supper. Two weeks before the present illness he had been thrown over a pony's head, with no more serious result than a little lameness.

On examination in St. Paul the patient presented a normal pulse and temperature and a clean tongue. The most striking feature was the markedly retracted, boat-shaped abdomen. The muscles were rigid, but there was no pain, and almost no tenderness. The vomiting continued. The respiration was so nearly normal as to have attracted no attention. Enemas gave little result and no relief, and the following day, the fourth from the injury, the patient was taken to the operating-room with a diagnosis of obstruction of some form, close to the stomach.

The incision was made through the left rectus muscle above the level of the umbilicus, and the opened abdomen presented the unusual picture of collapsed small intestines lying on the posterior wall. No stomach, colon, or omentum was to be seen. Palpation disclosed a thick rounded cord running upward and to the left, which, when followed, soon revealed the fact that we had to deal with a diaphragmatic hernia.

Reduction of the hernia, which was found to consist of the omentum, the transverse colon, and the greater part of the stomach, proved to be a difficult matter, since the negative pressure of the pleural cavity caused the displaced organs with each inspiration to be drawn back into the thorax, even against a degree of tension which threatened them with laceration. A striking phenomenon of

*Read before the Minnesota State Medical Association, June 1, 1905.

this stage of the operation was the rushing or gurgling sound heard with each inspiration as air entered the pleural cavity through the split. A quite extensive adhesion of the omentum to the diaphragmatic surface of the pleura added to the difficulties of the situation, and as the condition of the patient had become critical from the admission of air to the pleural cavity, with resulting displacement of the mediastinum to the right, and consequent labored action of the heart and right lung the difficulty was met, on the suggestion of Dr. Rogers, by resecting a rib and opening the thorax. This stopped the suction, and enabled us to replace the abdominal organs. The patient's condition, in spite of the administration of oxygen, was too critical to permit an attempt to suture the opening in the diaphragm. This consisted of a split of the muscle fibres about three and one-half inches long, the edges of which fell together when the hernia was replaced, and the return of the latter was prevented by a large amount of guaze packing, placed in the angle between the chest-wall and the upper surface of the diaphragm at the site of the rent, and emerging from the wound in the thorax. The abdominal wound was closed without packing.

At the end of the operation the apex beat was within an inch of the right nipple, and the resulting dyspnea and cyanosis, which were quite marked, were relieved for some days by the free use of oxygen. On the fourth day the gauze packing was removed from the chest, but the presence of plastic exudate prevented the finding and suture of the split, which had been planned.

The subsequent history of the case includes an empyema, with further resection of ribs, and ultimate complete recovery. At the present time the apex beat of the heart is in the normal position, and the lung, which after the operation was retracted to the level of the second rib, has expanded to the level of the wound in the wall of the thorax. In spite of the lack of sutures in the rent of the diaphragm, the recovery appears to be complete and permanent, since there seems to be no doubt that it is due to the firm adhesions of the damaged portion of the diaphragm to the thoracic wall.

Diaphragmatic hernia is a relatively rare condition, but, like many others, occurring more frequently than supposed, because of remaining undiagnosed. Up to 1874, 250 cases of traumatic origin had been collected by Lichtenstern, and of this number five only had been diagnosed before death¹. Of 276 cases collected by Lacher, seven were diagnosed ante-mortem. According to Chadbourne², Arnheim had, in 1896, been able to collect a total of 400 cases.

This form of hernia may be either congenital or acquired. The former variety is by no means rare. It usually presents an extensive opening

connecting the abdominal and thoracic cavities, nearly always on the left side, and due to incomplete development of the diaphragm. It regularly results in the early death of the infant, and has only a pathological interest, since it is not amenable to surgical treatment.

Acquired diaphragmatic hernia is stated by Kaufmann³ to be always traumatic. It may be divided into three classes:

First, those due to incised or punctured wounds involving the abdominal or thoracic wall, or both, and the diaphragm. They have resulted from sword, knife, gunshot wounds, and the like, and their recognition is often not difficult, as a part of the great omentum is quite likely to protrude from the wound.

The second class of cases is made up of those that have suffered a severe contusion or crushing injury of the thorax. In these cases there are immediate and severe symptoms of injury, but often apparent recovery after a tardy convalescence. The lesion is a small hernia, which blocks the opening and becomes adherent during the period of rest in bed. Severe strain or exercise at a later date results in the crowding of more of the abdominal contents into the thoracic cavity and the inauguration of symptoms of dyspnea or obstruction.

In a third class of cases the history fails to reveal any accident or severe injury, and the condition appears to have resulted from severe strains, often repeated, with sometimes the contributory factor of one-sided phrenic or general paresis.

Diaphragmatic hernia in more than five-sixths of the cases, by one authority stated to be 261 out of 282,⁴ occurs on the left side, the predilection for this side being explained probably by the intimate relations of the liver with the diaphragm on the right side. The opening through which the abdominal contents escape is sometimes the stretched-out aortic or esophageal ring, but more often a rent or split of the diaphragm in the direction of the muscle fibers.

All of the congenital and 90 per cent of the acquired forms are false hernias, that is, they are devoid of sac, the peritoneum and pleura having never been present, or having been ruptured at the time of the acquisition of the hernia, thus leaving the escaped organs naked in the pleural cavity. The three organs most frequently escaping by this route are the stomach, omentum, and colon. Besides these the small bowel, spleen, liver, duodenum, cecum, and kidney have been found.

The signs and symptoms vary according to the class to which the case belongs. Those with open wounds and protruding abdominal viscera hardly admit of error. When, on the other hand, only a bit of omentum has escaped into the pleural cavity, there may be no signs and only the symptoms

of indigestion and constipation, due to the resulting traction upon and displacement of the colon and the stomach. If the opening in the diaphragm is very large, so that these organs may lie partly in either cavity and without constriction, there will probably, in addition, be pain, shortness of breath, and inability to lie on the left side. There will be also the signs of a pneumothorax with inconstant outlines, and intestinal gurgling will be heard arising within the pleural cavity. In these cases the stomach and rectal tube have yielded valuable information.

When, as the result of a severe strain, a large or small portion of the intestinal tract is suddenly forced through a relatively small-sized opening, the symptoms are those of obstruction, with or without dyspnea and cardiac displacement, depending upon the volume of the displaced organs. In these cases pain, too, is usually present, though not in ours. The abdominal retraction, which was so marked a sign in this case, appears to be exceptional as I have found it mentioned in only one other of the cases of which I have been able to get the reports. The rule is great distention, as in other acute obstructions. It would seem that the retraction in the exceptional cases might be accounted for by the absence of sufficient constriction to set up inflammatory changes, and yet enough to produce nausea, so that the intestinal tract empties its contents through vomiting, at the same time transferring much of its bulk from the abdominal to the pleural cavity.

Operative relief should be undertaken, probably without exception, from the pleural side, for two reasons: First, because it may be impossible to draw the escaped organs back into the abdomen on account of the strong suction resulting from the negative pressure in the thorax, and second, because the surface of the diaphragm may be much more easily accomplished from the thoracic side. Operation performed in a partially exhausted cabinet, such as that used at the Mikulicz clinic, or with the aid of the Fell-O'Dwyer forced respiration apparatus, should permit of immediate closure of both the rent in the diaphragm and the thoracic wound. Without these aids any operation must be dangerous.

The mortality from this condition has been extremely high, most of the cases with symptoms of obstruction dying without operation, or following it. Walker⁶ reports a recovery following abdominal operation, in which a loop of the colon slipped through a rent in the diaphragm. Postoveski,⁷ of Bologna, and Riegner,⁸ of Breslau, have made immediate successful sutures of both diaphragm and chest-wall in cases of hernia due to cutting instruments, while a few cases have been reported in which traumatic diaphragmatic hernia without obstruction existed, and in which the patients refused operation and suffered from

pain, dyspnea, and inability to lie on the left side.⁹

From a consideration of this case and a review of the literature, it would seem that diaphragmatic hernia has proved a dangerous condition, chiefly for two reasons. The first is the failure to make a diagnosis, and, in consequence, to go about the management of the condition in the safest and most direct way. In all cases of obstruction from doubtful cause, the possibility of this one should be borne in mind. The presence of a scar in the diaphragmatic zone, or the history of an injury there, should excite suspicion. The mere consideration of the possibility of this cause might lead to a diagnosis, as it very possibly might have done in this case. In few conditions would a correct diagnosis be of more importance, since it means a radically different mode of procedure. The second element of danger is that of asphyxiation resulting from the opening of the pleural cavity, with consequent displacement of the heart and resulting embarrassment of its action and that of the lung of the other side, which is necessarily much compressed. In our case the patient would certainly not have survived the operation without the use of oxygen, but this measure, while more generally at hand, is not to be compared in efficiency with the rarefied-air operating-cabinet, or the apparatus for forced respiration.

With the diagnosis made, and with the aid of either of these apparatus, it would seem that operations for diaphragmatic hernia ought to yield results almost as good as those for mechanical obstruction in general.

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DISCUSSION

DR. W. H. MAGIE (Duluth): I am very glad to have had the opportunity of listening to the report of this very interesting case. It certainly proves to us the necessity of keeping in mind that such cases do occur and in order that they may be diagnosed and operated upon at the proper time. I have not seen a case of Diaphragmatic Hernia and know very little of the subject. They are either the results of traumatism or accidents of development. I imagine they are very difficult cases to diagnose and more difficult to operate upon. The operation by laparotomy followed by rib excision and opening of the chest above the rent in the diaphragm is the one usually adopted and practiced by most surgeons, and gives very good access to the wound in the diaphragm.

THE ACCURATE DETERMINATION OF ERRORS OF REFRACTION WITHOUT CYCLOPLEGIA, BY MEANS OF ASTIGMATIC CHARTS*

BY CHARLES NELSON SPRATT, B. S., M. D.

MINNEAPOLIS

With the hope that the refraction of the dioptric system of the eye might be obtained with greater accuracy, by eliminating errors due to ignorance or to faulty observation on the part of the patient, objective methods have attracted in recent years the attention of ophthalmologists.

We must remember, however, that the eye is not a simple optical instrument, whose refractive power can be easily measured. The accommodation, irregular astigmatism of the cornea and lens, chromatic and spherical aberration, or opacities in the media, interfere with the application of objective methods of refraction.

The ophthalmometer measures the curvature of the anterior surface of the cornea, and gives the axis of astigmatism, but it is not reliable as a means of determining the total astigmatism of the eye. With the use of a cycloplegic, retinoscopy is a valuable method, especially with illiterates and children. In intelligent adults, however, the final and most reliable means of determining errors of refraction is the trial case and test-card with the use of a cycloplegic.

Test-letters, as devised by Snellen, and modified by others, although of the greatest value in measuring and recording acuteness of vision, are open to certain objections as a means of estimating the refraction of the eye.

1. Letters are frequently unintentionally memorized by the patient.

2. A letter or a figure is a symbol made up of lines, and is recognized as a unit. Some of its component lines may be indistinct, yet from the general outline the character may be named correctly. Thus a certain element of chance or guess enters into the use of test-letters. As an example of this, the vertical line of the letter "E" may appear black and distinct to the astigmatic eye, and the horizontal lines blurred, yet the character might be recognized.

3. Patients often are unable to distinguish differences of clearness between two lenses, as one brings out certain portions of letters, while the second glass makes other portions clear. This is especially true if a cycloplegic is not employed.

While it is not possible to formulate specific rules for the prescribing of glasses, each case being a problem in itself, certain general principles are well recognized.

First. Astigmatism, since it is probably the most frequent cause of headaches from eye-strain, is to be accurately determined and full correction ordered.

Second. Full correction should be ordered in myopia. Certain cases may wear weaker glasses for near work.

Third. Enough hypermetropia is to be corrected to give good vision and relief from asthenopia. Generally all the manifest, with a portion of the latent hypermetropia, will accomplish this. Rarely is it advisable or necessary, except in strabismus cases or for near work, to order glasses correcting the total hypermetropia.

I desire to call attention to a simple subjective method, by which errors of refraction can be accurately determined, and glasses can be prescribed in the great majority of cases, without the use of a cycloplegic. This method involves the use of two procedures:

First. Fogging, or the slight blurring of test-charts, by making the eye myopic. This procedure was mentioned by Donders (1860) in his classical work, "The Accommodation and Refraction of the Eye," as a method of demonstrating the presence of astigmatism in the normal eye. By this fogging we accomplish two things: 1. The patient is able to distinguish smaller differences in distinctiveness between the lines on the astigmatic charts. 2. The ciliary muscle is placed at rest. It is true that in certain young individuals the habit of using the accommodation for distant vision is so strong that in spite of this fogging a portion of the accommodation is brought into play. This latent hypermetropia is generally small in amount as compared with the total hypermetropia, and as the individual grows older it becomes more and more manifest. In the majority of the adults the total hypermetropia can be determined by means of charts and blurring. Satisfactory results can be obtained in children only by use of a cycloplegic.

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In myopia the accommodation is at rest with distant vision. We under-correct the myopia so as to leave a slight fogging, thus avoiding the possibility of ordering too strong a concave glass. The astigmatism, almost without exception, remains constant, regardless of the state of the accommodation.

Second. The second procedure consists in the use of astigmatic charts. The chart, in its simple form, consists of two lines at right angles to each other, the direction of these lines being parallel to the principal meridians of the dioptric system—these, of course, correspond in almost every case to the meridians of maximum and minimum curvature of the cornea. It is evident that if the eye is myopic in both meridians, the accommodation thus being at rest, one of the lines will appear more blurred than the other if any astigmatism is present. It is a simple matter to place cylindrical lenses in front of the eye until this blurred line becomes as distinct as the other. There is no guesswork on the part of the patient. The lines appear either equally distinct, or one is more so than the other. The cylinder gives us the total astigmatism. By this method 1-8 D, and in cases 1-16 D, astigmatism can be determined.

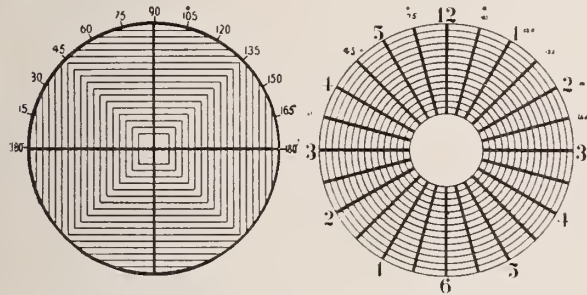


Fig. 1

The charts used for this method are those devised by Dr. Frederick H. Verhoeff, of Boston, and were published in the *Ophthalmic Record*, November, 1899. These are shown in the accompanying illustrations. Fig. 1 is used to determine the amount, and Fig. 2 the axis, of the astigmatism. The former consists of a disk pivoted through its center to a board so that it may be rotated to any desired position. Lines are drawn on the disk, as illustrated. This is then rotated so that one of the heavy lines corresponds to the axis of the astigmatism.

"It is evident that if one of the wide lines appears more distinct to the astigmatic patient, the fine lines at right angles to it will appear blurred while at the same time the fine lines at the right angles to the less distinct of the two wide lines will appear comparatively sharp. In this way the apparent difference in distinctiveness between the two wide lines is increased, since the sharp line is made to appear still sharper by contrast with

its more or less uniformly blurred background, and the blurred line appears still more blurred because of the fine lines at right angle to it having become distinct. In effect, it seems as if the blurred wide line were hidden behind the sharp fine lines."

"Another advantage of the fine lines is due to the fact that, while they exaggerate the apparent difference in distinctness between the two wide lines, they also decrease the total amount of light reflected from the chart, thus rendering the latter less fatiguing to the eye. The fine lines are an additional advantage in that astigmatism of low grade may be estimated by having the patient confine his attention to them and ascertaining which pair of quadrants are the more distinct. In this way, too, after the amount of astigmatism has been determined by the aid of the wide lines, it may be confirmed by the fine lines."

The method of using the charts is as follows:

The eye, if hypermetropic, is made slightly myopic in all meridians, by over-correcting with convex glasses. If the eye is already myopic care is taken not to place before the eye the full correction. The patient looks at the "wheel" chart, Fig. 2, and is told to designate the blackest diameter. This gives us at once one of the principal meridians of the dioptric system. Should two or three adjacent lines appear black and distinct, the meridian lies at a point midway between them.

The chart shown in Fig. 2 is placed before patient, and the card rotated so that one heavy line corresponds to the meridian determined by the former chart. After making certain that both heavy lines on the chart are blurred, concave cylinders are placed with axes parallel to the more blurred of the two heavy lines until the patient recognizes no difference in distinctness. As a more delicate test, he is asked to compare the fine lines on the chart. If these are quite indistinct, the blurring is slightly reduced by substituting a weaker sphere in hypermetropia or a stronger sphere in myopia.

The fine lines on the chart ought to be slightly and equally blurred. If one series is more distinct than those at right angles to it, cylinders are placed in the trial frame until all the fine lines are uniform. At this point the patient ought to read about O-6-9. The strength of the sphere is now reduced (in myopia the sphere is increased) until the lines on the chart are sharp and black and the patient is able to read 6-5, unless there is some other defect in the eye.

I have recorded the comparative results obtained with the use of charts without cycloplegia and again of the same eye after the instillation of homatropia two per cent every ten minutes for a period of one and one-half hours. The patients were, with six exceptions, adults, and were most-

ly private cases. Fifteen of them are from records of cases refracted by me during my service as interne at the Massachusetts Charitable Eye and Ear Infirmary. The patients were selected only with reference to their intelligence, the selection being done before the use of a cycloplegic. Arranged according to age, they fall into the following groups:

- Under 20 years, 12 cases.
- From 20-30 years, 16 cases.
- From 30-40 years, 22 cases.
- From 40-50 years, 13 cases.
- Over 50 years, 3 cases.

I have classified the eyes into three groups.

The first includes, with few exceptions, those in the last two, as in practically every eye showing myopia or hypermetropia some astigmatism could be demonstrated.

Refraction determined without cycloplegia by means of astigmatic charts and fogging, compared with that found in the same eyes after the use of homatropine:

	-1.0	-.75	-.50	-.37	-.25	-.12	0	+12	+25	+.37	+.50
Astigmatism..... (126 eyes.)	-	1	-	2	4	7	95	9	7	2	-
Myopia..... (31 eyes.)	-	-	-	2	5	8	21	-	-	-	-
Hypermetropia..... (83 eyes.)	3	4	5	2	9	3	85	5	12	2	3

From a study of the above several points are of interest:

1. In 95 per cent of cases the astigmatism determined by the use of charts and fogging, but without cycloplegia, was within .25 D of that found after use of homatropine. This includes 75 per cent out of a total of 126 eyes, in which there was no difference in the amount. In 4 cases there was an apparent error of .37 D, and in 1 case an error of .50 D.

2. No eye in the above series would have been given too strong a concave glass if the cycloplegic had been omitted. In two-thirds of the eyes the total myopia corresponded exactly with that found under a cycloplegic. The remaining one-third would have been under-corrected from .12 D to .37 D. Several cases showing from —.3 D to —.7 D of myopia are included in the above.

3. As would be expected, there was less uniformity in results obtained in the eyes showing hypermetropia than in the other two series. Eleven out of 83 eyes showed .50 D to 1. D of latent hypermetropia. A large proportion of these were young adults with low grades of hypermetropia. Fourteen showed less than .50 D, and in 35 eyes (or 42 per cent) the total hypermetropia was correctly determined without cycloplegia.

One apparent paradox is seen in the above table, in that 22 eyes accepted, with charts, a stronger convex glass than when under a cycloplegic.

The only explanation I can offer for this is that in emmetropic or slightly hyperopic eyes the blurring produced by a weak convex glass, with a small pupil, is not great enough to reduce distant vision. This glass, when placed before the same eye, under a cycloplegic, adds to great circles of diffusion, produced by the large pupil and spherical aberration, enough blurring to materially reduce the acuteness of vision.

It is in these cases that unsatisfactory results would have followed had homatropine not been used. A patient will not wear, with comfort, a convex glass which over-corrects the hypermetropia. The cases in which charts and fogging failed to show the total hypermetropia would, however, wear the glass with comfort, as it would give relief from asthenopia and allow acute vision for distance. Later, some of them would have return of the asthenopia, and would require a stronger convex lens. This is just what occurs if a cycloplegic is used. We do not correct all the latent hypermetropia, as this is not necessary or desirable.

We order for constant use the strongest convex glass that will give good vision, knowing that later, when some of the latent hypermetropia has become manifest, it will be necessary to increase the strength of the convex lens.

CONCLUSIONS

1. With intelligent adults, subjective methods of refracting are preferable to objective methods.
2. The comparison of two lines at right angles, these corresponding to the axis of maximum and minimum refraction of the dioptric system of the eye, is a more accurate method of determining errors of refraction than by the use of test-letters.
3. Astigmatic charts, as devised by Verhoeff, are preferable to the single line charts, as the contrast produced by the cross lines enables one to estimate more accurately any difference in distinctiveness in the test lines corresponding to meridians of maximum and minimum refraction.
4. In practically all cases the astigmatism and myopia can be as accurately determined without as with cycloplegia.
5. A large proportion of cases of hypermetropia can be satisfactorily refracted without the use of cycloplegics.

Enlargement of the veins at the sides of the abdomen is indicative of obstruction to the flow of blood in the inferior vena cava; distention of veins about the umbilicus suggests obstruction in the portal circulation. The former may be associated with varices of the lower extremities, the latter with hemorrhoids.—American Journal of Surgery.

EXTRA-UTERINE PREGNANCY, WITH REPORT OF CASE*

BY J. W. ANDREWS, M. D.

MANKATO, MINN.

On January 14, 1905, Mrs. S., living in a neighboring village, was brought to St. Joseph's Hospital, Mankato, and placed under the writer's care.

Personal History.—Age 26, married four years, mother of one child three years old. Menstruation had always been regular from girlhood, but rather profuse lasting usually one week. Patient's health had always been good, except she had suffered for several years past with chronic constipation.

Family History.—Unimportant. She had a normal menstruation the first part of November, 1904; and in the first part of December, the time for her regular menstruation, she had had a slight show lasting one-half day. She was nauseated at times, but at no time did she vomit. This condition of nausea began the later part of November.

One week before coming under the writer's care she was seen by her home physician. She then complained of intermittent pelvic pains; her temperature was subnormal, and her pulse 120. There was practically no change from these symptoms during the subsequent week until the patient was subjected to the exertions incident to bringing her to the hospital, a distance of about fifty miles. When she arrived at the hospital her temperature was 101° F., and pulse 130. She appeared anemic and exhausted. Physical examination revealed a tenderness both at the right and left of the uterus, but more marked on the right side, where, lying close to the uterus, was a small rather soft tumor. By careful palpation I could differentiate it from the uterus. Although in this case there had been no sharp, sudden onset of pain with syncope, as often happens, there were, on the other hand, rather light intermittent pains, yet I did not hesitate to make a diagnosis of extra-uterine pregnancy. Her attending physician had made the same before bringing her to the hospital.

Whether I did right or wrong I will leave it for you to judge, but so extreme was the condition of the patient that I did not operate for thirty-six hours. In the meantime I had her given one-half liter of normal salt solution per rectum every four hours, and one-thirtieth gr. of sulphate of strychnia hypodermically every four hours. For nourishment she was given malted milk. The pulse improved having dropped in thirty-

six hours from 130 to 120, with a corresponding increase in volume, but the temperature was unchanged registering still 101° F.

Operation.—Having been made ready in the usual way, the patient was placed upon the table, and a central abdominal incision was made, sufficiently long to afford easy access to the pelvis. Upon reaching the subperitoneal fat I observed that it was of a dark-greenish color, which spoke in almost positive terms of hemorrhage deeper down. Upon opening the peritoneal cavity, blood, apparently fresh, welled up through the wound, rising an inch or more above the surface. Anticipating this I had kept my incision sufficiently large through all the tissues so that I was not handicapped in my work because of lack of room. Immediately upon entering the abdominal cavity I thrust my hand down through the pool of blood grasped the fundus uteri, and quickly followed out towards the broad ligament, grasped the blood vessels on the uterine side with heavy pressure forceps, and as quickly grasped the vessels on the distal side of the tumor in the same way. This stopped the hemorrhage, and I was enabled to remove about one and one-half liters of blood and blood clots with reasonable deliberation. The mass was then isolated, ligated, and removed in the usual way. I then mopped out the peritoneal cavity with warm sponge pads, but did not irrigate. Numerous small clots of blood were left here and there adhering to the intestines and peritoneum. I established drainage out through the lower angle of the wound and also through Douglas' cul-de-sac. The patient made a good recovery, and is at this time enjoying the best of health. In this operation I was very ably assisted by my partner, Dr. J. S. Holbrook.

A most careful macroscopical examination was made of the debris and contents of the sack, but no fetus or any remains of one could be found. The contents of the sack, however, were subjected to a careful microscopical examination with the following result: A small embryo of between five and six weeks' growth, the budding limbs and cartilaginous auditory canal, and also chorionic villi were present.

I have operated for extra-uterine pregnancy nine times. All have gotten well, and all have furnished a good history of extra-uterine pregnancy. In none have I been able to find a fetus, or any remains of one, except by microscopical examination. When I read the literature on ectopic pregnancy, and see the numerous cuts of

*Read before the Western Surgical and Gynecological Association, December 29, 1905.

well formed fetuses of variable size, I wonder if I have always been correct in my diagnosis. And yet I remember one of my cases where the family physician was present at the time of the operation, and made the assertion afterward that the diagnosis was wrong because no fetus was found. Yet in that very patient a few days after operation, milk appeared in the breasts in considerable quantity. In this case it was presumed that the woman was five months pregnant. There was a mass of old clotted blood in and about the right tube, but no fetus. A microscopic examination was not made in this case.

History.—When we review the history of ectopic pregnancy we are surprised to find that a practical knowledge of it is a child of the latter part of the 19th century. There is a record of some early operations for extra-uterine pregnancy as early as the 16th century; but if one studies these closely he will find that they were accidents with no plan or purpose, or perhaps they were the opening of an abscess through the vagina which had resulted from a ruptured extra-uterine pregnancy.

In 1594 Primrose performed a laparotomy for extra-uterine fetation. I think this was the first deliberately performed operation for this malady of which we have any record. John Bard, of New York, was the first American surgeon to operate. I do not know the date of his operation, but it was toward the latter part of the 16th century, neither do I know whether Bard's operation was successful or not. It is a fact worthy of record that Bard's operation was followed by several operations in this country performed by country surgeons, and these were in the main successful as were the operations performed later by Sims and McDowell. While these latter operations were of a different kind, yet they have done much to immortalize the country surgery of America. Up to and including the year 1875, Dr. Parry had collected a list of 62 operations, for extra-uterine pregnancy, with 30 recoveries and 32 deaths.

Up to this time the operations had a few earnest and conscientious advocates, and many bitter opponents. It remained for the immortal Tait to popularize the operation both in Europe and this country. On October 26, 1897, Tait had operated 35 times with two deaths.

Let it not be forgotten, however, that laparotomy for ruptured ectopic gestation is one of the major operations in abdominal surgery, and the tyro in surgery should let it alone.

Causes.—The causes can be summed up in very few words if one deals with facts and not with theories. The facts are that extra-uterine pregnancy is caused by some obstruction in the tube to the inward migration of the vitalized ovum. It may be wholly mechanical by pressure from

without; it may be an old salpingitis; there may be a polypus in the tube (rare, however,); or it may be a kinking of the tube. But all these mean the same thing from a practical standpoint, and few of these specific causes can be demonstrated post-operatively. There are several well authenticated cases where the impregnated ovum has migrated from one side to the other and lodged in the opposite tube, and thus ectopic gestation takes place. There is one condition which, without doubt, stands in a causative relation to extra-uterine pregnancy, and that is a long period of sterility, which so often precedes this kind of pregnancy.

Experiments on the lower animals have taught us that the spermatozoon meets the ovum at or near the ovary. Indeed, the spermatozoon has frequently been found bathing in the peritoneal fluid enveloping the ovary, waiting for his better half to come forth.

SYMPTOMS AND DIAGNOSIS

The symptoms of extra-uterine pregnancy are substantially the same as those of intra-uterine up to the time of rupture. Symptoms of this form of pregnancy should be considered separately before and after rupture. Before rupture there is no characteristic symptom—nothing to lead either patient or physician to any more than barely suspect that the pregnancy is outside of the uterus. Even a physical examination will not clear up the diagnosis, for we cannot differentiate a pus tube from an extra-uterine pregnancy. The fact is, the physician is very seldom consulted in a case of pregnancy of this kind before rupture takes place. Sometimes a slight hemorrhage will appear two or three months after conception has taken place, and with this hemorrhage the decidua vera will be thrown off, and a microscopical examination will give us positive evidence of extra-uterine pregnancy, but this is very unreliable, after all, for it seldom takes place before rupture, and after rupture has taken place the physician does not need the decidua to make a diagnosis, provided intra-uterine pregnancy with abortion can be excluded.

It would seem that any practitioner would be able to exclude intra-uterine pregnancy with abortion where extra-uterine pregnancy really exists, and yet it has often happened that the mistake has been made, and the case stands on the record as abortion until future developments have proven its fallacy.

When rupture has taken place the symptoms are characteristic, and the diagnosis easy, but unfortunately it is too often too late, for frequently in the very early weeks of extra-uterine pregnancy rupture takes place, and the hemorrhage is fatal before surgical assistance can be had.

As a rule the first symptom of rupture is intense, and is accompanied by agonizing pain,

which is referred to some part of the pelvis. It comes like a flash of lightning from a clear sky, and a patient will sometimes drop as if shot with a revolver.

While writing this paper Mrs. B., an acquaintance, not a patient of mine, fainted in the ball-room while she was dancing. She could not be revived by the ordinary methods, and a physician was summoned who found her in a collapse from which she never rallied. After the physician obtained a history of the case his diagnosis was extra-uterine pregnancy with rupture of the sack and consequent fatal hemorrhage. He was probably correct.

One of my patients, the wife of a traveling man, was out riding one evening with her husband. She did not even suspect that she was pregnant, but, quick as thought, she uttered a frightful scream, and fell helpless over against her husband. So great was the prostration which immediately followed that her husband feared he would not reach home with her alive. I operated as soon as I could get her to the hospital and get her ready. A small ruptured sack was found in the isthmus of the right oviduct. The opening was small, and there was a surprisingly small amount of hemorrhage, considering the severity of the initial pain and the prostration which followed. The patient made a good convalescence.

Does it not seem a little strange, when we contemplate the character and severity of the symptoms immediately following the rupture in ectopic pregnancy, that the pain and shock are greater than the rupture of an appendiceal abscess or intestinal perforation? While to the patient and friends the pain is the most alarming symptom, it pales into insignificance compared with the

hemorrhage. The pain is the red light, the hemorrhage is the wreck. The hemorrhage is caused, not by the rupture *per se*, but by the separation of the fetal membranes. There is no contractility of the tube, hence the blood flows out in great profusion, and usually does not cease until a clot is formed, which, in its unstable position, easily gives way and hemorrhage recurs. The patient often becomes pale and anemic with thready pulse and cold perspiration.

Treatment.—Either before or after rupture there is but one line of treatment which will do any good, and that is surgical. Oxytocics, adrenaline, and other drugs are perfectly useless with one exception, namely, morphia. A good hypodermic of morphia will put the parts at rest, control to some extent the hemorrhage, will do good, and should be given for temporary relief.

When, as rarely happens, the diagnosis is made before rupture takes place the treatment is simple, and the mortality is almost nil. I shall not describe the method of procedure or the technic of the operation to this intelligent body of physicians. If rupture has taken place and the patient comes into the hands of the surgeon soon after, as is usually the case, the technic and the steps of the operation are not very different from an ordinary laparotomy. But the patient is in a grave condition, and the operation is a grave one. Hence, I would council accuracy and rapidity in work, and I wish to emphasize the necessity in many cases of thrusting the hand down through the pool of blood and securing the blood vessels before attempting to mop out or otherwise remove the blood and blood clots.

I think drainage as a rule should be employed after a laparotomy for extra-uterine pregnancy.

INTESTINAL PERFORATION IN TYPHOID FEVER, WITH REPORT OF CASES*

BY WALTER COURTNEY, M. D.

BRAINERD, MINN.

IN TWO PARTS—PART I.

In the general consideration of intestinal perforation in typhoid fever, as regards its present status, it may not be amiss to make comparison with appendicitis relative to the surgical history of both. Without going into the earlier history of these pathologic conditions, it will be sufficient to consider them from the time they were prominently brought to the notice of the medical

profession. The epoch-making contribution on appendicitis by Fitz, of Boston, appeared in 1886. What ought, equally, to have been the awakening call in regard to typhoid perforation, was made by Leyden, of Berlin, in 1884, and again in 1896 by Wilson, of Philadelphia. What has happened meanwhile? An enthusiastic and glorious achievement for the surgery of appendicitis, and only faltering and apathetic efforts in the direc-

*Read before the Minnesota State Medical Association, June 1, 1905.

tion of typhoid perforation; thousands of successful operations annually for the former, and the world's record in 1904 (362 reported operations) on the latter.

Why have we been so intensely active as regards appendicitis and so hesitant concerning typhoid perforation when such staticians as Taylor and Brooks inform us that 16,000 to 20,000 persons die annually in the United States alone from the latter cause? The answering explanation is not immediately obvious, particularly when we recall that the earlier consideration given to appendicitis was essentially for perforation, abscess, and peritonitis. The difference is one of the anomalies of surgical progress.

Of all the explanations that might be advanced, the one that seems most reasonable is the poor results that follow early surgical efforts, in general peritonitis, from whatever cause, joined with the infrequent and fortuitous contact of the general practitioner with typhoid perforation.

The frequency of perforation in typhoid fever has been variously given by different authorities. Liebermeister found it in 26 of 2,000 cases, or 1.3 per cent; Murchison in 48 of 1,580 cases, or 3.03 per cent; Curschmann in 22 of 829 cases, or 2.7 per cent; Armstrong (Montreal Genl. Hospital) in 34 of 932 cases, or 3.66 per cent. In our own work it was present in 11 instances in 576 cases, or 1.9 per cent.

Curschmann, in his admirable work ("Typhoid Fever and Typhus Fever," edited by Osler, Nothnagel's Encyclopedia) says: "I believe that under the most unfavorable circumstances perforation occurs in not more than 3 per cent of all cases of typhoid fever."

Age.—Children, it has been stated, are less liable to perforation than adults. Our own work offers no assistance in this point since all our cases were in adults.

Sex.—As regards sex there seems to be but little difference, although perforation is said by some writers to occur more often in males. (As our own cases were almost wholly in the male

Season seems to have but little influence. Curschmann states, however, that "the frequency of perforation of the bowel may, precisely like that of intestinal hemorrhage, be extremely variable at different times." We have particularly noticed this in our own cases. Our first cases of 11 perforations occurred in the late months of 1890 and the early months of 1901; our last three cases have occurred within the last six months.

That perforation is more likely to occur in cases accompanied by diarrhea would seem to be indicated by the fact that of 30 cases of perforation at Johns Hopkins Hospital, 20 had diarrhea, 16 of them at the time of perforation. Our 11

cases of perforation showed marked diarrheal tendencies in only four.

The relationship of tympany to perforation does not seem to be very marked. When there is deep ulceration and accompanying tympany, perforation may be more readily brought about by mechanical causes, such as straining at stool, turning in bed, etc. Curschman is inclined to believe that tympany is not so much a sign of severe intestinal lesions as it is a symptom of severe general infection, which gives rise to paralysis of the muscular layer of the intestine and consequent gaseous distention. Our own experience tends strongly to confirm this view.

Hemorrhage in typhoid fever occurs in varying frequency, anywhere from 4 to 8 per cent, in the larger collection of reported cases. In 829 cases at Johns Hopkins Hospital it occurred in 6 per cent. In our 576 cases it occurred in 43 (7.4 per cent), counting all evacuations of blood sufficient in amount to be termed hemorrhage. It was the cause of death in 11 cases. The average number of hemorrhages per case was 3.3. The average number of hemorrhages to each case that died was 5.1. Hemorrhage occurred in 3 of our 11 cases of perforation.

Like perforation, we have found hemorrhage to vary considerably at different times, but with no well marked relationship between the two. In our hemorrhage cases the intestinal loss of blood occurred in nearly all during the primary attack of the fever, and seldom during a relapse.

Keen in his work ("Surgical Complications and Sequels of Typhoid Fever, 1898.") in dealing with the subject of intestinal perforation, summarized the 83 operative cases that had been reported. The result showed 19.36 per cent of cures and 80.64 per cent of deaths. The first three operations ever performed for typhoid perforation were by Mikulicz, Kussmaul, and Bontecau, in the order named.

Finney, in the Johns Hopkins Hospital Reports, Vol. 8, 1900, under the title "Surgical Treatment of Perforative Typhoid Ulcer," gives a brief history of the 112 operated cases he was able to collect. Of these 23 recovered, or 20.05 per cent.

Harte and Ashurst, in their comprehensive contribution, "Intestinal Perforation of Typhoid Fever" (Annals of Surgery, January, 1904,) summarize the 362 operated cases that they collected with the following results: Recovered 94, or 25.97 per cent; died 268, a mortality of 74.03 per cent. Their analysis by lustrums gave:

1884-1888,	10 cases,	mortality 90	per cent.
1889-1893,	16 cases,	mortality 87.5	per cent.
1894-1898,	100 cases,	mortality 72	per cent.
1899-1903,	166 cases,	mortality 69.2	per cent.

This readily gives us an idea of the progress in operative work.

Of our 11 perforation cases, 5 were operated upon, with 1 recovery and 4 deaths, giving a recovery of 20 per cent, and a mortality of 80 per cent. All the unoperated cases died.

The status of unoperated perforations does not seem to change. Various writers place the mortality of these cases at 95 per cent, and this opinion is confirmed by Curschmann.

We cannot comprehensively discuss the subject of interstitial perforation of typhoid apart from typhoid fever itself. A long list of cases from any institution, or practitioner's records, when carefully studied, can scarcely fail to be of value. The accurate and painstaking work on typhoid fever performed under Osler, at Johns Hopkins Hospital, throughout a number of years, has been of incalculable benefit in the study of every feature of the disease. Similar work elsewhere, is, of course, entitled to its proper share of credit.

To simply review our cases of perforation would not be, I believe, of the same value as if all typhoid cases were given, even brief, consideration. This report is intended to cover a period of fifteen years, from March 15, 1890, to March 15, 1905. The work was all performed within the Northern Pacific Railway Hospital, at Brainerd, and does not include cases among our employees and others treated at their homes. There is a peculiarity about our work that does not often exist outside of railway hospitals, and that is the extent of territory which the work covers. Our cases come from along our railway lines in Minnesota, Northern Wisconsin, Manitoba, North Dakota, and as far west as the middle of Montana.

In view of the fact that more than 90 per cent of our cases came from abroad, frequently with little or no previous observation or treatment, often in the second week of the disease and sometimes in the third, with mental hebetude, and occasionally delirium, already established, you will appreciate how difficult it is to be exact concerning early clinical features in many of these cases.

During the fifteen years (1890-1905) we admitted and treated 576 cases of typhoid fever. Of these 534 recovered, or 92.7 per cent, and 42 died, a mortality-rate of 7.3 per cent. The causes of death were as follows:

Toxemia, with severe nervous manifestations, 12 (28.5 per cent of the total mortality).

Hemorrhage, 11 (25.9 per cent of the total mortality).

Intestinal perforation, 10 (28.8 per cent of the total mortality).

Pulmonary complications, 5 (11.9 per cent of the total mortality).

Acute heart failure with sudden death, 4 (9.5 per cent of the total mortality).

Occurrence of typhoid fever as to season: Ex-

actly 75 per cent of the 576 cases were admitted during the last six months of the year, (July 1, to Dec. 31.); the remaining 25 per cent were admitted from Jan. 1 to June 30, while over one-third (35.76 per cent) of total cases came in during the months of September and October.

Of this series of 576 cases, 291 (over 50 per cent) were admitted and treated during the last five years, during which time there was a total of 16 deaths, from all causes, or a mortality rate of 5.5 per cent.

The total mortality-rate in 829 cases of typhoid fever treated at Johns Hopkins Hospital during the years 1889-1899, was 7.5 per cent. Comparison tends to show that typhoid fever patients' chances for recovery are not necessarily minimized by being transported long distances on railway trains.

We used Widal's serodiagnosis in a considerable proportion of our cases, particularly in the doubtful ones. I wish, incidentally, to call attention to an objective symptom of typhoid fever, namely, tremor of the tongue. We have found it almost universally, in all grades of cases and from the earliest stage to convalescence. In character, it may be from complete loss of muscular control to a mere vibratory-tremor movement noticeable only near the tip. Associated with others of the usual clinical symptoms, we have found it of value before Widal's reaction test could be elicited.

As regards the general treatment of our cases, I would say that for more than sixteen years we have relied mainly on the tub-bath.

The detailed histories of our perforation cases will be given after the section on treatment.

PATHOLOGY OF INTESTINAL ULCERATION AND PERFORATION

The lesions of the intestine in typhoid fever consist mainly of changes in the lymphoid tissue, and these may be divided into four stages; first, the stage of hyperemia; second, that of medullary infiltration; third, that of necrotic destruction and ulceration; and, fourth, that of cicatrization. "In general, these anatomic stages correspond with the clinical course of the disease. It is to be borne in mind that the intestinal lesion does not develop and extend simultaneously and uniformly, but rather in stages, often distributed over a considerable period of time, and it likewise undergoes involution in a corresponding manner." (Curschmann). This will account, in a measure, for the appearance of perforation at varying times, in a long list of perforation cases. For a more extended description of the minute anatomic change of typhoid fever, I will refer you to such authorities as Curschmann, Osler, Mallory, and others.

The so-called medullary infiltration and consequent coagulation necrosis may extend only to the muscular coat which would form the base of the ulcer. This is most frequently the case. Or the ulcerative destruction may include the muscular layer and subserous tissue, and leave only the peritoneal coat, through which infection may pass and cause a local peritonitis. Again, it may involve the whole thickness of the intestinal wall, and when the slough separates a complete perforation results, varying in size from a pin hole to an opening including a third or more of the circumference of the bowel. The escape of intestinal contents and infective germs may vary from a minute quantity to a sufficient amount to

flood a great portion of the peritoneal cavity, depending, usually, on the size of the perforating ulcer. Where the amount of leakage is great general peritonitis is almost certain to appear in a very short time. When the opening is extremely small and the leakage slight, we may have only a localized peritonitis. (In Case 11 of our series it was disclosed at operation that there had been an early pin hole perforation with localized peritonitis to the extent of eroding the bowel of its glossy appearance throughout the affected area, and later two large ulcers had perforated, causing the symptoms which called for operation. The primary perforation had been closed by plastic matter and the adhesion of the neighboring omentum.)

A CASE OF PSEUDO-PTERYGIUM AND SYMBLEPHARON RELIEVED BY THE USE OF THIERSCH GRAFTS

BY WILLIAM R. MURRAY, PH. B., M. D.

MINNEAPOLIS

Patient, male, April 24, burned in right eye by molten metal while at work in machine shops. The injury was followed by a symblepharon at the lower part of the lower lid and by the formation of a large fleshy pseudopterygium, which extended from the bottom of the lower cul-de-sac to the center of the cornea, and was firmly attached to the episcleral tissue. There was diplopia present, due to interference with the movements of the eyeball and to the encroachment of the growth upon the pupillary area. Six months after the injury the growth was removed by dissection and conjunctival flaps were brought

cornea, removing the epithelial layer with it, and dissected the body of the pterygium from its attachment deep down to the bottom of the cul-de-sac and excised it.

The conjunctival and episcleral tissue was then thoroughly scraped, and a large and very thin Thiersch graft was transferred from the arm, the lower border of the graft extending down to the bottom of the cul-de-sac and the upper border to the edge of the cornea. Fine silk sutures were then inserted to hold the graft firmly in place.

Union of the graft to the under lying tissue readily occurred.

Fig. 2 shows the condition of the eye at the present time, one year after the operation. There is no reattachment of the lower lid to the eyeball, and the lower lid when in its natural position covers the graft with the exception of a small portion at the nasal side of the cornea. The graft still has a whitish appearance, and there is still some exfoliation of the epidermal cells from the graft, both of which are gradually disappearing.

I report this case as showing the good results that may be obtained by the use of Thiersch grafts in a class of cases in which, in my experience, other methods of operating have usually been unsatisfactory.

The method of operating which I have followed in this case is one which was devised and advocated by Dr. F. C. Hotz, of Chicago.

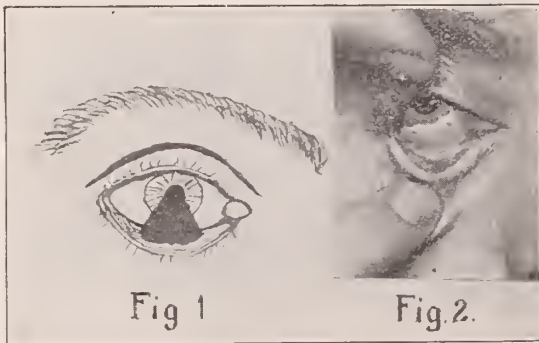


Fig. 1. Shows the lower lid drawn down to expose the cul-de-sac.

down from each side and sutured below the cornea. Ten months later the growth had recurred in its original location, as shown in Fig. 1.

I advised operation, and under cocaine anesthesia dissected the apex of the growth from the

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MARCH 15, 1906

THE ANNUAL MEETING OF THE HEN-
NEPIN COUNTY MEDICAL SOCIETY

On Monday evening, April 2d, at 7 o'clock, the regular annual meeting and banquet of the Hennepin County Medical Society will take place at the West Hotel. Invitations are hereby extended through the JOURNAL-LANCET to members of the various county and district societies throughout the state. A large attendance is expected on account of the attractive program.

Dr. Nathan S. Davis and Dr. Archibald Church, of Chicago, will present papers on medical and neurological subjects. Both men are widely known. Dr. Davis, who is a prominent internalist, has many friends and students scattered over the Northwest who will be glad to see and hear an old teacher. Dr. Archibald Church is one of the noted neurologists in this country. Church and Peterson's Text-Book on Nervous and Mental Diseases is a standard work, and through it Dr. Church has thoroughly introduced himself. He is a ready writer and speaker, and will doubtless give an instructive paper.

The Hennepin County Society has a membership of over 200, and with the usual number of outside guests the attendance will be large. It is advisable that those desiring to attend the meeting send in their requests for tickets early. The plates are \$2.00 each. Tickets may be procured from Dr. F. C. Todd, 304 Pillsbury Bldg.

Dr. Davis will speak upon "The Significance of Urinary Findings in Nephritis," and Dr. Church's subject is "A Few Practical Neurological Points."

WISELY AND WELL DONE

Dr. F. R. Smyth, of Bismarck, N. D., Councilor for the 6th District of that State, informs us that the subjoined agreement has been signed by all the physicians of Burleigh county (Bismarck is in this county), and it is now being sent to every physician in the thirteen counties of his district. Such action is very wise, because it protects the public and the insurance companies, as well as physicians. The price fixed for the work is very moderate, and no man capable of doing it well, and thus protecting both insurer and insured, will do it for less. In this way the companies will be compelled, and, we believe, not unwillingly, to do business properly.

The agreement is as follows:

AGREEMENT REGARDING INSURANCE EXAMINATIONS

The undersigned physicians, registered and practicing in the Sixth Judicial District, North Dakota, believing that the duties of insurance medical examiners require a high degree of professional skill, absolute integrity, and special attention to the interests of the insurance companies, do hereby pledge themselves to exercise skill and care in all examinations and to make no discrimination in examinations or fees to different companies. They further agree to be governed by the following schedule of fees:

\$5.00 for each ordinary examination, including urinalysis.

\$10.00 for each examination where microscopic examination of urine, sputum, or other secretion is required.

\$3.00 for each certificate of health for renewal of lapsed policy.

SUNDAY CLOSING AND RECREATION

In many of the towns in Germany there is a concerted action toward the cessation of business on Sunday. The physicians have organized and combined to take one day in the week for rest and recuperation. The towns are divided into districts, and one physician remains in the district each Sunday. Notice is sent to police headquarters in order that calls may be promptly attended. The arrangement is an amicable one, and patients who are very ill are expected to allow the temporary resident physician to attend in place of the regular visitor. A brief synopsis of the case, with the line of treatment, is left with the family in order that no misunderstandings may occur. The plan has been in operation some time, and is working admirably. There may be difficulties in the way at times, but the people are being gradually educated up to the point where they appreciate the necessity of one day of rest for the busy practitioner.

If our present plan of brotherhood and good fellowship can be carried out it may be possible to introduce this agreeable habit in America.

The druggists in the Republic of Argentina have issued regulations which embody a similar plan. This would be a welcome change for the overworked drug clerks. One store in each district could easily take care of all the prescription business for one day.

The time is coming when Americans will take more time to live. The physicians and pharmacists would do better work if they knew that one day each week would be one of freedom from sick calls.

The telephone has already simplified the practice of medicine in many ways, and the public have not grumbled. The practitioner who begins the practice of medicine should inaugurate a system that would permit him a certain time for rest, study, and repair. In the smaller towns it might not seem feasible, but the constant and strenuous work of the physician is nerve-racking and often leads to drug habits.

The people can be educated to understand that the doctor is not equal to all the demands placed upon him, and the doctor should not feel that he must respond to every call at any hour, particularly if he is physically unfitted for the work.

It is a notorious fact that physicians in the country towns are overworked because they are overzealous or fearful that some other practitioner may supersede them. An understanding between fellow practitioners that the work is sufficient for both, or an interchange of work, even though an occasional call is divided, is sufficient compensation for the few hours spent in rest or recreation.

The Sunday closing feature with slight modifications will be of decided benefit.

OF VITAL IMPORTANCE TO PHYSICIANS

A law of Minnesota, which has been on the statute books for nearly twenty years, requires that every physician entitled to practice in the state shall hold a certificate and *shall file* such certificate with the clerk of the district court in the county where he resides. About twenty per cent of the physicians in the state have not complied with this law, and it is well for such men to ask themselves, "Is it worth while to do so?"

Let us see. Not to do so is to subject one's self to "a fine of \$50 or imprisonment for 10 days," with no discretion on the part of the court to remit the fine. And more: the physician who has not complied with the law could not bring suit for his charges for services rendered, and probably could not testify as an expert or medical witness in any suit.

Some of our best known men have not complied with the law, and we think it would be rather embarrassing to have the question, Who has not complied with the law? put to the House of Delegates at our next annual meeting.

SERUM FOR THE TREATMENT OF EXOPHTHALMIC GOITRE

Papers by Dr. S. P. Beebe and Dr. John Rogers, of New York, in the Journal of the A. M. A. for Feb. 17, discuss the preparation of a serum for the treatment of exophthalmic goitre.

The theory that Graves' disease is due to an over-activity of the thyroid gland and that the active portion of its secretion is a globulin containing iodine, called thyroglobulin, is accepted for discussion. It is also presumed that the

physiologic action of the thyroid secretion is to neutralize some toxin arising in the course of metabolism. The use of thyroid extract, the serum obtained from thyroidectomized sheep, and known as thyroidectin, antithyroiden, etc., is discussed. Some favorable results have been reported from the use of these preparations, but on the whole the general benefits have not been remarkable. A number of improvements have been reported, and some cures have resulted.

The experiments of Beebe and Rogers with a thyroid cytotoxin obtained from fresh thyroids from an exophthalmic goitre, are interesting. The glands were ground to a pulp, extracted with normal salt solution, and the coarse fibres strained off. The rather thick, cloudy filtrate was then made frankly acid with acetic acid, and a heavy precipitate of nucleoproteids resulted. The supernatant liquid was then syphoned off and half saturated with ammonium sulphate, which carried down the remaining nucleoproteids and the globulins including the thyreoglobulins. The fresh preparation was injected into rabbits, and after five weeks the rabbits were bled to death and a serum thus obtained.

The injection of the serum caused local and constitutional reaction, followed by recovery in two cases. The remaining cases were treated by a serum made from dried preparations.

On the whole the experiments were convincing, and they show what may be done in these distressing cases.

CORRESPONDENCE

A SANITARY MEASURE

Minneapolis, March 8, 1906.

TO THE EDITOR:

The publication of Dr. Sweeney's "Criticism of the State Board of Medical Examiners," read before the State Medical Association last June, is of advantage in that it serves to stir again the conscience of the profession in this State, and it cannot be stirred too often. This paper, with its discussion, emphasizes the fact, of which the profession is well aware, that the law regulating the practice of medicine is not enforced. It seeks to fix the responsibility of failure. It reveals, also,

certain inadequacies in the law, which have proved difficult of legislative remedy. And why?

The medical profession would like to see the law enforced, and it would like to have the law remedied; but it has found both desires balked of their fulfillment. The reason is not far to seek to the searcher who is honest in his seeking, and candid enough to reveal the nature of his find. The medical profession does not command public sentiment, either in the courts or in the legislature. It is paying the penalty of its own general unfitness, if not in the immediate present, at least in a past so immediate that its shadow still stretches across the path of the present. Throughout its rank and file it has lost very much of its ancient prestige, in the minds of the people, as a learned profession. In the uneducated, but not largely befooled, eye of the public there is not enough difference between the average regular and the average irregular to justify the one in the exercise of proscriptive measures against the other. There is too much of the sin of the fakir in the camp of Achan to permit it to prevail, with the consent of public opinion, over the host of the unprofessional Philistine. Purge the camp, and the medical Israel will recover to itself the secret of power.

Let us turn awhile from the prosecution of the war against the Philistine. Let us impose yet higher requirements of fitness upon the would-be practitioner of medicine. Let us furnish to the public indubitable guarantees of culture and training. Let us establish so wide a margin between the medical scientist and the pretender, of whatsoever type, that the one cannot come into competition with the other, and there will be needed no legislative bar sinister for the protection or enlightenment of the public.

It may be gravely doubted, indeed, whether the repeal of the Minnesota medical practice act would not be a sanitary measure. The survival of the fittest is a good stimulus to the struggle for fitness to survive. The necessity of intelligent choice upon the part of the public is a prompter to sound discrimination. Law or no law, in the end the people get what they want. In the practice of medicine, as in everything else, demand and supply are correlative. Massachusetts is as well off in the matter of physicians as any other state in the union, and she has always refused to

enact a medical law. Let us stop begging the courts and the legislature to justify our professional existence, and, working out our own salvation, let us establish our own title to be.

Respectfully,

RICHARD OLDING BEARD.

REPORTS OF SOCIETIES

HENNEPIN COUNTY SOCIETY

A regular meeting of the society was held March 6, Dr. F. C. Todd, the president, in the chair, and sixty members present.

The Executive Committee reported on the new quarters in the Court House and the temporary meeting place, and offered the following as an amendment and by-law No. 5 for the future order of business: 1. Reading of minutes of the previous meeting. 2. Report of executive and other committees. 3. Election of new members. 4. Nominations for membership. 5. New and unfinished business. 6. Presentation of clinical cases. 7. Reading of papers and their discussion. 8. Presentation of specimens.

The following nominations for membership were made: Dr. W. Hay Bartlett, M. and C. College, Philadelphia, 1903; Dr. W. O. Fryberger, Hahnemann, Chicago, 1887; Dr. Karl H. Schmitt, Northwestern, 1903; Dr. W. H. Allen, U. of Minn., 1900.

Upon a favorable report from the censors the following were elected to membership: Drs. C. S. McKee, E. W. Alger, Charles A. Reed, and Robt. A. Campbell. Dr. H. W. Cook's name was reported favorably, but was not acted upon as he has not resided six months in the county.

Dr. J. E. Moore offered the following resolution:

Inasmuch as Dr. C. W. Malchow, a member of this Society in good standing, has been recently adjudged a violator of the postal laws for writing and distributing a book entitled "The Sexual Life," we, members of the Hennepin County Medical Society, in regular meeting assembled, feel it our duty to thus publicly express our disapproval of what we deem an unjust verdict. Dr. Malchow stands high in this community morally, socially, and professionally, and we cannot believe that he was actuated by any but proper motives in the writing of this book. We believe that the verdict was rendered by laymen who

are ignorant of the value of the scientific truths set forth in this book and who naturally share the prejudice of the laity against new or unfamiliar scientific truths. We are confident that no such verdict would ever be rendered by a body of scientific men.

If this verdict is allowed to stand as an interpretation of the law, we fear that it will establish a very dangerous precedent, one which will interfere with the writing and distribution of scientific works on anatomy, physiology, gynecology, obstetrics and other topics touching upon the sexual relation, therefore,

Be It Resolved, That we pledge ourselves individually and collectively to render Dr. Malchow every assistance in our power to reverse this verdict.

Resolved, That a copy of this preamble and this resolution be spread upon our minutes and made use of in every possible way to aid Dr. Malchow.

Dr. Moore moved the adoption of the resolution, and it was seconded and carried.

The scientific program was then in order.

Dr. J. T. Moore read a paper with title, "Actinomycosis, with report of a case." The paper was discussed by Dr. Knut Hoegh and others, and the discussion was closed by Dr. Moore.

Dr. H. L. Staples reported a case of "Septic Endocarditis, with autopsy report by Dr. Wm. M. Chowning.

PROGRAM FOR MONDAY, MARCH 19

This meeting will be held under the auspices of the Minneapolis Pathological Society, in the County Commissioners' Rooms in the County Court House. Dr. J. Clark Stewart will give a lecture on "Tumors of the Breast," which will be illustrated with lantern slides.

PROGRAM FOR MONDAY, APRIL 2ND—ANNUAL

BANQUET

At this meeting Dr. N. S. Davis and Dr. Archibald Church, of Chicago, will deliver addresses, Dr. Davis speaking upon "The Significance of Urinary Findings in Nephritis," and Dr. Church upon "A Few Practical Neurological Points."

The program will be an interesting and instructive one. All members of county and district societies are cordially invited to attend. Tickets to the banquet (\$2.00 each) may be obtained of Dr. F. C. Todd, 204 Pillsbury Bldg., Minneapolis.

C. H. BRADLEY, M.D., Secretary.

CONSTITUTION AND BY-LAWS

OF THE MINNESOTA STATE MEDICAL ASSO- CIATION

CONSTITUTION

ARTICLE I—NAME OF THE ASSOCIATION

The name and title of this organization shall be the Minnesota State Medical Association.

ARTICLE II—PURPOSES OF THE ASSOCIATION

The purposes of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of Minnesota and to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of state medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public, in the prevention and cure of disease, and in prolonging and adding comfort to life.

ARTICLE III—COMPONENT SOCIETIES

Component Societies shall consist of those county medical societies which hold charters from this Association.

ARTICLE IV—COMPOSITION OF THE ASSOCIATION

Section 1. This Association shall consist of Members, Delegates and Guests.

Sec. 2. Members. The Members of this Association shall be the members of the component county medical societies.

Sec. 3. Delegates. Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component societies in the House of Delegates of this Association.

Sec. 4. Guests. Any distinguished physician not a resident of this state who is a member of his own State Association may become a guest during any Annual Session on invitation of the officers of this Association, and shall be accorded the privilege of participating in all of the scientific work for that Session.

ARTICLE V—HOUSE OF DELEGATES

The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Delegates elected by the component county societies, (2) the Councilors, and (3), ex-officio, the President and Secretary of this Association.

ARTICLE VI—COUNCIL

The Council shall consist of the Councilors, and the President and Secretary, ex-officio. Besides its duties mentioned in the By-Laws, it shall constitute the Finance Committee of the House of Delegates. A majority of Councilors shall constitute a quorum.

ARTICLE VII—SECTIONS AND DISTRICT SOCIETIES

The House of Delegates may provide for a division of the scientific work of the Association into appropriate Sections, and for the organization of such Councilor District Societies as will promote the best interests of the profession, such societies to be composed exclusively of members of component county societies.

ARTICLE VIII—SESSIONS AND MEETINGS

Section 1. The Association shall hold an Annual Session, during which there shall be held daily General Meetings, which shall be open to all registered members and guests.

Sec. 2. The time and place for holding each Annual Session shall be fixed by the House of Delegates.

ARTICLE IX—OFFICERS

Section 1. The officers of this Association shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and eight Councilors.

Sec. 2. The officers, except the Councilors, shall be elected annually. The President shall appoint the first Councilors, to serve for one year, or until their successors are elected. The terms of the elected Councilors shall be for three years, those first elected serving one, two and three years, as may be arranged. All of these officers shall serve until their successors are elected and installed.

Sec. 3. The officers of this Association shall be elected by the House of Delegates on the morning of the last day of the Annual Session, but no Delegate shall be eligible to any office named in the preceding section, except that of Councilor, and no person shall be elected to any such office who is not in attendance upon that Annual Session, and who has not been a member of the Association for the past two years.

ARTICLE X—RECIPROCITY OF MEMBERSHIP WITH OTHER STATE SOCIETIES

In order to broaden professional fellowship this Association is ready to arrange with other State Medical Associations for an interchange of certificates of membership, so that members moving from one state to another may avoid the formality of re-election.

ARTICLE XI—FUNDS AND EXPENSES

Funds shall be raised by an equal per capita assessment on each component society. The amount of the assessment shall be fixed by the House of Delegates, but shall not exceed the sum of \$2.00 per capita per annum, except on a four-fifths vote of the Delegates present. Funds may also be raised by voluntary contributions, from the Association's publications, and in other manner approved by the House of Delegates. Funds may be appropriated by the House of Delegates to defray the expenses of the Association, for publications, and for such other purposes as will promote the welfare of the profession. All resolutions appropriating funds must be referred to the Finance Committee before action is taken thereon.

ARTICLE XII—REFERENDUM

Section 1. A General Meeting of the Association may, by a two-thirds vote of the members present, order a general referendum on any question pending before the House of Delegates, and when so ordered the House of Delegates shall submit such question to the members of the Association, who may vote by

mail or in person, and, if the members voting shall comprise a majority of all the members of the Association, a majority of such a vote shall determine the question and be binding on the House of Delegates.

Sec. 2. The House of Delegates may, by a two-thirds vote of its own members, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

ARTICLE XIII—THE SEAL

The Association shall have a common Seal, with power to break, change or renew the same at pleasure.

ARTICLE XIV—AMENDMENTS

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the Delegates present at any Annual Session, provided that such amendment shall have been presented in open meeting at the previous annual session, and that it shall have been published twice during the year in the bulletin or journal of this Association, or sent officially to each component society at least two months before the meeting at which final action is to be taken.

BY-LAWS

CHAPTER I—MEMBERSHIP

Section 1. The name of a physician on the properly certified roster of members of a component society, which has paid its annual assessment, shall be prima facie evidence of membership in this Association.

Sec. 2. Any person who is under sentence of suspension or expulsion from a component society, or whose name has been dropped from its roll of members, shall not be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Sec. 3. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of his society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that Session. No member shall take part in any of the proceedings of an Annual Session until he has complied with the provisions of this section.

CHAPTER II—ANNUAL AND SPECIAL SESSIONS OF THE ASSOCIATION

Section 1. The association shall hold an Annual Session at such time and place as has been fixed at the preceding Annual Session by the House of Delegates.

Sec. 2. Special meetings of either the Association or of the House of Delegates shall be called by the President on petition of twenty delegates or fifty members.

CHAPTER III—GENERAL MEETINGS

Section 1. All registered members may attend and participate in the proceedings and discussions of the General Meetings and of the Sections. The General Meetings shall be presided over by the President or by one of the Vice-Presidents, and before them shall be delivered the address of the President and the orations.

Sec. 2. The General Meeting may recommend to the House of Delegates the appointment of committees or commissions for scientific investigation

of special interest and importance to the profession and public.

CHAPTER IV—HOUSE OF DELEGATES

Section 1.—The House of Delegates shall meet at 2 p. m. on the day before that fixed as the first day of the Annual Session. It may adjourn from time to time as may be necessary to complete its business; provided, that its hours shall conflict as little as possible with the General Meetings. The order of business shall be arranged as a separate section of the program.

Sec. 2. Each component county society shall be entitled to send to the House of Delegates each year one delegate for every fifty members, and one for each fraction thereof, but each component society which has made its annual report and paid its assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate.

Sec. 3. Twenty delegates shall constitute a quorum.

Sec. 4. It shall, through its officers, Council and otherwise, give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each Annual Session a stepping stone to future ones of higher interest.

Sec. 5. It shall consider and advise as to the material interests of the profession, and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public-health legislation, and to diffuse popular information in relation thereto.

Sec. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such county societies as already exist, and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under medical society influence.

Sec. 7. It shall encourage post-graduate and research work, as well as home study, and shall endeavor to have the results utilized and intelligently discussed in the county societies.

Sec. 8. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body.

Sec. 9. It shall, upon application, provide and issue charters to county societies organized to conform to the spirit of this Constitution and By-Laws.

Sec. 10. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into societies to be designated by hyphenating the names of two or more counties so as to distinguish them from district and other classes of societies, and these societies, when organized and chartered shall be entitled to all the privileges and representation provided herein for county societies, until such counties may be organized separately.

Sec. 11. It shall divide the State into Councilor Districts, specifying what counties each district shall include, and, when the best interest of the Association and profession will be promoted thereby, organize in each a district medical society, and all members of component county societies, and no others, shall be members in such district societies. When so organized, from the presidents of such dis-

strict societies shall be chosen the vice-presidents of this Association, and the presidents of the county societies of the district shall be the vice-presidents of such district societies.

Sec. 12. It shall have authority to appoint committees for special purposes from among members of the Association who are not members of the House of Delegates. Such committees shall report to the House of Delegates, and may be present and participate in the debate on their reports.

Sec. 13. It shall approve all memorials and resolutions issued in the name of the Association before the same shall become effective.

CHAPTER V—ELECTION OF OFFICERS

Section 1. All elections shall be by ballot, and a majority of the votes cast shall be necessary to elect.

Sec. 2. The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the General Session.

Sec. 3. Any person known to have solicited votes for or sought any office within the gift of this Association shall be ineligible for any office for two years.

CHAPTER VI—DUTIES OF OFFICERS

Section 1. The President shall preside at all meetings of the Association and of the House of Delegates; shall appoint all committees not otherwise provided for; he shall deliver an annual address at such time as may be arranged, and perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and, as far as practicable, shall visit by appointment the various sections of the State and assist the Councilors in building up the county societies, and in making their work more practical and useful.

Sec. 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of the President's death, resignation or removal, the Council shall select one of the vice-presidents to succeed him.

Sec. 3. The Treasurer shall give bond in the sum of \$3,000. The Council shall execute said bond with some indemnity company at the expense of the Association. He shall demand and receive all funds due the Association, together with the bequests and donations. He shall pay money out of the treasury only on a written order of the President, countersigned by the Secretary; he shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of the funds in his hands. The amount of his salary shall be fixed by the Council.

Sec. 4. The Secretary shall attend the General Meetings of the Association and the meetings of the House of Delegates, and shall keep minutes of their respective proceedings in separate record books. He shall be ex-officio Secretary of the Council. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer, all funds of the Association which come into his hands. He shall provide for the registration of the members and delegates at the Annual Sessions. He shall, with the co-operation of the secretaries of the component societies, keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county society, and, on request, shall transmit a copy of this list to the American Medical Association. He

shall aid the Councilors in the organization and improvement of the county societies and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence notifying members of meetings, officers of their election and committees of their appointment and duties. He shall employ such assistants as may be ordered by the House of Delegates, and shall make an annual report to the House of Delegates. He shall supply each component society with the necessary blanks for making their annual reports; shall keep an account with the component societies, charging against each society its assessment, collect the same, and at once turn it over to the Treasurer. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. The amount of his salary shall be fixed by the Council. The Secretary shall present to the Association on the last day of the General Session, a summary of the proceedings of the Council and the House of Delegates.

CHAPTER VII—COUNCIL

Section 1. The Council shall meet on the day preceding the first General Meeting of the Annual Session and daily during the Session and at such other times as necessity may require, subject to the call of the chairman, or on petition of three Councilors. It shall meet on the last day of the Annual Session of the Association to organize and outline work for the ensuing year. It shall elect a chairman and a clerk, who, in the absence of the Secretary of the Association, shall keep a record of its proceedings. It shall, through its chairman, make an annual report to the House of Delegates.

Sec. 2. Each Councilor shall be organizer, peace-maker and censor for his district. He shall visit the counties in his district when necessary for the purpose of organizing component societies where none exist; for inquiring into the condition of the profession, and for improving and increasing the zeal of the county societies and their members. He shall make an annual report of his work and of the condition of the profession of each county in his district at the Annual Session of the House of Delegates. The necessary traveling expenses incurred by such Councilor or in the line of the duties herein imposed may be allowed by the House of Delegates on a proper itemized statement, and each Councilor shall receive as compensation a per diem of \$10.00 while engaged in making his official visits to the counties in his district, but this shall not be construed to include his expense in attending the Annual Session of the Association.

Sec. 3. The Council shall be the board of censors of the Association. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies, or this Association. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or component societies on which an appeal is taken from the decision of an individual Councilor, and its decision in all such matters shall be final.

Sec. 4. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into societies, to be suitably designated so as to distinguish them from district societies, and these societies, when organized and chartered, shall be entitled to all rights and privileges provided for component societies until such counties shall be organized separately.

Sec. 5. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Association, and shall have authority to appoint an editor and such assistants as it deems necessary. All money received by the Council and its agents, resulting from the discharge of the duties assigned to them, must be paid to the Treasurer of the Association. As the Finance Committee it shall annually audit the accounts of the Treasurer and Secretary and other agents of this Association and present a statement of the same in its annual report to the House of Delegates, which report shall also specify the character and cost of all the publications of the Association during the year, and the amount of all other property belonging to the Association under its control, with such suggestions as it may deem necessary. In the event of a vacancy in the office of the Secretary or the Treasurer, the Council shall fill the vacancy until the next annual election.

CHAPTER VIII—COMMITTEES

Section 1. The standing committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Necrology.

A Committee on Arrangement, and such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.

Sec. 2. The Committee on Scientific Work shall consist of three members, of whom the Secretary shall be one, and shall determine the character and scope of the scientific proceedings of the Association for each session, subject to the instructions of the House of Delegates. Thirty days previous to each Annual Session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented.

Sec. 3. The Committee on Public Policy and Legislation shall consist of three members and the President and Secretary. Under the direction of the House of Delegates it shall represent the Association in securing and enforcing legislation in the interest of public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall strive to organize professional influence so as to promote the general good of the community in local, state and national affairs and elections.

Sec. 4. The Committee on Arrangements shall be appointed by the component society of the county in which the Annual Session is to be held. It shall provide suitable accommodations for the meeting-places of the Association and of the House of Delegates, and of their respective committees, and shall have general charge of all the arrangements. Its chairman shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the session as occasion may require.

CHAPTER IX—COUNTY SOCIETIES

Section 1. All county societies now in affiliation with this Association or those which may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, on application, receive a charter from and become a component part of this Association.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State

in which no component society exists, and charters shall be issued thereto.

Sec. 3. Charters shall be issued only upon approval of the Council or House of Delegates and shall be signed by the President and Secretary of this Association. The Council or the House of Delegates shall have authority to revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Only one component medical society shall be chartered in any county. Where more than one county society exists, friendly overtures and concessions shall be made, with the aid of the Council for the District, if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

Sec. 5. Each county society shall judge of the qualifications of its own members, but, as such societies are the only portals to this Association and to the American Medical Association, every reputable and legally registered physician who does not practice or claim to practice, nor lend his support to any exclusive system of medicine, shall be entitled to membership. Before a charter is issued to any county society, full and ample notice and opportunity shall be given to every such physician in the county to become a member.

Sec. 6. Any physician who may feel aggrieved by the action of the society of his county in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council, and its decision shall be final.

Sec. 7. In hearing appeals the Council may admit oral or written evidence as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a Board and as individual Councilors, in district and county work, efforts at conciliation and comprise shall precede all such hearings.

Sec. 8. When a member in good standing in a component society moves to another county in this State, his name, on request, shall be transferred without cost to the roster of the county society into whose jurisdiction he moves.

Sec. 9. A physician living on or near a county line may hold his membership in that county society most convenient for him to attend, on permission of the society in whose jurisdiction he resides.

Sec. 10. Each component society shall have general direction of the affairs of the profession in its county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county; and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county.

Sec. 11. At some meeting in advance of the Annual Session of this Association, each county society shall elect a delegate or delegates and an alternate or alternates to represent it in the House of Delegates of this Association, in the proportion of one delegate to each fifty members or fraction thereof, and the Secretary of the society shall send a list of such delegates to the Secretary of the Association before April 1st.

Sec. 12. The Secretary of each component society shall keep a roster of its members and of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice

in this State, and such other information as may be deemed necessary. In keeping such roster, the Secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall be certain to account for every physician who has lived in the county during the year.

Sec. 13. The Secretary of each component society shall forward its assessment, together with its roster of officers and members, list of delegates, and list of non-affiliated physicians of the county to the Secretary of this Association each year before April 1st.

Sec. 14. Any county society which fails to pay its assessment or make the report required, on or before April 1st, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House of Delegates until such requirements have been met.

Sec. 15. It is hereby declared that the acceptance and performance, either or both of them, whether in person or by proxy, of any of the duties pertaining to the practice of medicine or surgery under contract or stipulation, written, verbal or otherwise, for any fraternal society, insurance company, club, or corporation which agrees to furnish to its members or patrons medical or surgical attendance, or requires its physicians to furnish such services to its members or patrons, for a fee or remuneration less than the minimum fee charged for like services in practice in that locality is unprofessional practice and such practice on the part of any member of the profession shall constitute sufficient ground for his rejection by or expulsion from any affiliated county society.

Nothing in this section, however shall be construed as applying to government, state, county, or municipal institutions; nor to legitimate hospitals or dispensaries; nor to the chief surgeon of railway systems, shipping or mining companies, or their assistants; nor to prevent any physician or surgeon from extending his gratuitous services to the poor.

Sec. 16. All county societies in affiliation with this Association are required to incorporate this section 15 in their By-Laws.

Sec. 17. Any affiliated county society admitting to or retaining in membership one who is guilty of the aforesaid unprofessional practice shall have its charter revoked, and shall be expelled from this association.

CHAPTER X—MISCELLANEOUS

Sec. 1. No address or paper before the Association, except those of the President and orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes, nor more than once on any subject except by unanimous consent.

Sec. 2. All papers read before the Association or any of the Sections shall become its property. Each paper shall be deposited with the Secretary when read.

Sec. 3. The deliberations of this Association shall be governed by parliamentary usage as contained in Roberts' Rules of Order, when not in conflict with this Constitution and By-Laws.

Sec. 4. The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

CHAPTER XI—AMENDMENTS

These By-Laws may be amended at any Annual Session by a majority vote of all the delegates present at that session, after the amendment has laid on the table for one day.

NEWS ITEMS

Dr. D. F. Dumas has given up practice at Belgrade.

Dr. C. W. Meckstroth has been appointed postmaster of Brandon.

Dr. H. O. Schaleben has moved from Lake Benton to Thief River Falls.

Dr. I. D. Clark, of Harvey, N. D., is doing post-graduate work in Chicago.

Dr. C. F. Coulter, of Wadena, has gone to New York City for post-graduate work.

The new hospital at Forman, N. D., conducted by Dr. H. L. Taylor, has been opened.

Aneta, N. D., wants a hospital and the citizens have gone to work with a will to get one.

The Commercial Club of Faribault has headed a movement for a city hospital for that city.

Dr. L. W. Meyers, a recent graduate of the University of Illinois, has located at Westhope, N. D.

Dr. A. W. Stinchfield, of Rochester, accompanied by his wife, is spending a month in California.

Dr. Hugo Speir, of Rochester, who submitted to a serious operation last month, is rapidly improving.

Dr. E. S. Judd and Dr. A. P. Maschgar, of St. Mary's Hospital, Rochester, are visiting eastern hospitals.

Four physicians, of Dickinson, N. D., own automobiles, Dr. V. H. Stickney being the latest "shuffer."

Dr. F. M. Archibald, of Atwater, has purchased the practice of Dr. C. O. Hertzman, of Lindstrom.

Dr. F. A. Dunsmoor, who has been traveling in Europe with his daughter, has returned to Minneapolis.

Dr. J. W. Turnbull has given up practice at Richville and been succeeded by Dr. J. W. Corrigan, of Buckman.

Dr. Ralph James, an interne of the Minneapolis City Hospital, has taken charge of the hospital at Appington.

Dr. C. O. Hertzman, who has been practicing a number of years at Lindstrom, has decided to move to Ashland, Wis.

Dr. Charles A. McKay, of Emerado, N. D., was married last month to Miss Laura E. Donaldson, of Orilla, Ontario.

Mrs. Rose Lewis, a graduate nurse of the St. Paul City and County Hospital, has been appointed head nurse of the hospital at Edgerly, N. D.

Dr. Bray's Hospital at Biwabik was destroyed by fire last month, with a loss of \$15,000. Dr. Bray will immediately build a new structure of brick.

Dr. George Douglas Head was not injured in an accident last month, as reported in the daily papers. It was Dr. Hedbach, and he was not very much hurt.

Dr. J. L. Jones, one of the oldest practitioners in Montana, died last month at Windom, in that state, at the age of 55. He practiced many years at Dillon, and only recently went to Windom.

Dr. J. P. Freeman, of Emmons, has purchased the practice of Dr. W. L. Palmer, of Glenville, who is obliged to seek a change of climate. Dr. Freeman will take a post-graduate course in Chicago.

The local chapter of Alpha Kappa Kappa held its eighth annual meeting at the West Hotel, Minneapolis, last month. Dr. Cornelius Williams, of St. Paul, acted as toast-master at the banquet.

The Warren City Hospital opened its doors last month, and every citizen of Warren is said to be praying for an attack of appendicitis that he may be admitted to the comfortable and inviting interior of the new institution. Dr. Theodore Bratrud is president.

The City and County Hospital of St. Paul has chosen the following graduates of Hamline and the State University to act as internes next year: W. G. Brede, Peter Vistaunet, V. E. Verne, Neil McLane, C. C. Thauwald, M. S. Henderson, E. M. Hammes and L. N. Bergh.

The Rice County Medical Society met at Fari-bault last month, when the following officers were elected: president, Dr. F. M. Rose; secretary and treasurer, Dr. F. S. Warren, delegate, Dr. W. H. Rumpf. Dr. F. M. Rose offers the society a prize of \$50 for the two best essays on surgery and gynecology.

At Rolette, a new town on the Soo in North Dakota, three physicians are contending for leadership or the right to survive. One of them has set aside one day in the week for free treatment to all deserving poor, and the local paper says the next move will be to offer a can of baking powder free to every new patient. There are modern business methods!

A newspaper report from Colorado Springs, Colo., announces a meeting of medical college presidents at that place to consider the laws of states which deny the graduates of such colleges recognition and the right to practice medicine without passing the state examinations,—a denial

that is based upon the length of the medical courses in such colleges. Their proposed remedy is to boycott all such states.

Dr. H. J. Rowe, secretary of the North Dakota State Medical Association, has been threatened with a law-suit for \$25,000 for exposing a quack remedy for the cure of obesity, put on the market by a notorious quack drug clerk. Dr. Rowe will not be frightened, and we imagine he will not permit his quack friend to get much out of the advertising sought by making this threat. North Dakota is fast making a history in medical and pure food and drug laws that any state may well envy.

PRACTICE FOR SALE

In a town of 400 in southern Minnesota, on two lines of railroads, mixed nationality. Practice established four years; no competition; nearest town 12 miles; country thickly settled; practice paying from \$3,500 to \$4,000 a year; no real estate for sale unless wanted; practice goes to purchaser of my office equipments and driving outfit for \$1,500. Railroad and insurance appointments net more each year than half the price asked. Terms given to party with references. Good introduction. Splendid opening for a good man. I want to retire from practice. A Norwegian physician preferred. Address H, care of this journal.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during the fine season in the delightful city, write for particulars, to New Orleans Poly-clinic, P. O. Box 797.

WANTED

To form a partnership, act as assistant, or share office with a physician in a large city in Minnesota, Minneapolis preferred. Have had five years of general experience; age 27; speak Norwegian; will give and expect references. Address N. M., care of this journal.

PRACTICE FOR SALE

A good opening in a village of 530 inhabitants, 30 miles from the Twin Cities, with the nearest physician twelve miles away. Practice will be turned over to the purchaser of my driving outfit, drugs, etc., for \$500. Reason of selling: I am going to the city to practice. Address "M," care of this journal.

PHYSICIAN WANTED

A Norwegian physician is wanted at Lankin, N. D., where the population is mostly Norwegian. For further information address B. B., care of this office.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

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PRESENT PROSTATIC SURGERY*

By J. W. LITTLE, M. D.

MINNEAPOLIS

The operations usually done at the present time, and the ones to which I will confine my considerations, are the suprapubic and the perineal, as the others, Ramm, White, or double castration method, cauterization or Bottini method, and vasectomy as advocated by Reginald Harrison are not now being used much. I know of no operator employing them at the present time in the Northwest, although Bottini has some followers in the East and in malignant involvement of the prostate it is said to be superior to the open method. Personally, I have had no experience with it, and am therefore not competent to pass judgment upon it.

As to priority in either the supra-pubic or the perineal operation I find so many claimants I cannot be positive in my statements without doing some one an unintentional injustice. In another's words: "I can not tell how the truth may be, I say the tale as 'twas said to me." Certain it is that Delfield, McGill, and Fuller were the pioneers in the suprapubic work, as were Gouley, Goodfellow, and Dittel in the perineal.

In what cases shall we advise operation? We must operate for cause, and not because an examination reveals a large prostate any more than we would operate for a uterine fibroid that was giving no trouble. Large prostates often give no trouble while a small middle lobe may produce enough obstruction to demand catheterization. Patients without cystitis who need to use a catheter only occasionally and whose residual urine can be kept clear by urotropin can be safely carried along indefinitely, and many need never

come to operation. Most of these cases are old men and have but a few years to live, and if they can be made comfortable without operation it is our duty to so advise them. The time has not yet arrived when the proper and intelligent use of the catheter ought to be dispensed with. In atonic degeneracy of the bladder it may not be possible to dispense with the catheter.

Paul Thorndyke tells of one of his early prostatectomies in which he removed completely a large prostate, and still had to use the catheter as before on account of an absolutely atonic bladder. Operation should be advised and urged upon those who have really entered catheter life before infection takes place, as it surely will, but if the advice goes unheeded they will certainly seek your aid, and gladly submit to an operation if it promises relief from cystitis.

The cause of hypertrophied prostate is not known: neither sexual excesses nor gonorrhoea explain it. This must be comforting to some. It is surely the "white man's burden," for Negroes, Indians, and Chinamen are practically exempt from it.

Having decided to operate, how shall we proceed? It is not an operation of emergency, therefore all the time necessary to properly prepare the patient should be taken. Have the patient drink large quantities of water, and make the urine antiseptic by giving ten grains of urotropin, well diluted with water, three times a day after meals. The bowels should be thoroughly emptied, and the skin made ready to assist in the eliminating process by thoroughly cleansing with warm soap and water bath. Just before the operation the

*Read before the Hennepin County Medical Society, October 2, 1905.

bladder should be irrigated with a warm boric solution. Personally, I believe inspection by the cystoscope unnecessary and not without danger of starting cystitis or adding to an already existing one.

CHOICE OF OPERATION

If for any reason inspection of the bladder is desired the suprapubic method should be used, and I have found that a most thorough and satisfactory examination can be made with a Ferguson speculum as the ureteral papillæ can be easily seen, and every part of the bladder well inspected.

In the large intravesical growths, which by rectal examination appear high up, it would also be the operation of choice. In the beginning I did all my operations above, but several years ago I tried the perineal route and was so pleased with it that it is now the one of preference. The patient is much more comfortable after the operation, because the drainage is in the right place and the bed can be kept almost dry, and when the patient is able to be up and the tube removed the closure is much more rapid and in every way pleasanter for him.

I am satisfied that however suprapubic openings are dressed some of them will annoy the patient, nurse, and surgeon by the escape of urine over the abdomen. Joseph Wiener, Jr., of Mount Sinai Hospital, advocated a method of doing suprapubic prostatectomies by means of nitrous oxide gas. He claims that an operation can be done in this way in a very few minutes and with much greater safety to the desperate cases suffering from nephritis, or in any case in which an anesthetic would add materially to the danger. I have not seen it tried, but believe it could be done, and I can readily see the advantage it would be in the class of cases just mentioned.

Dr. Lilienthal, also of Mount Sinai Hospital, thus describes the operation: "The patient being on the table a catheter is passed into the bladder, and when the viscus is empty a rubber atomizer bulb is attached to the catheter. The anesthetic is then administered. In most cases nitrous oxide gas may be used in the beginning and will frequently carry the patient safely through the operation. If unexpected difficulties arise, it may be followed by ether. A sagittal incision two or two and a half inches long is made in or near the median line, and the recti retracted. The ungloved finger of the operator is inserted between the muscles, and bladder inflated by the rubber bulb in the hands of an assistant until the viscus feels tense on digital palpation. The peritoneal reflection is now pushed up out of the way with the handle of the scalpel, and held there with a blunt retractor. Two silk traction sutures are deeply placed in the vesical wall. Between these sutures the bladder is punctured with a narrow-bladed knife, and the opening thus made enlarg-

ed by stretching with dressing forceps. Thus far one or two minutes have probably been consumed without hurry and with no appearance of haste. The bladder is now explored by the finger. Stones, if present, are removed and the prostate is carefully palpated. An assistant inserts his finger into the rectum pushing up the prostate so that it may be caught firmly with a volsella. An incision is then made with scissors into the substance of the prostate through its capsule, and enucleation performed with the aid of two fingers. This should be done deliberately, freeing first the posterior part of the organ and being guided by the assistant's finger in the rectum.

"If it is desired to examine the work by the eye the patient may be placed in the Trendelenburg position when blunt retractors or a bivalve speculum will expose the field. Thorough flushing of the bladder with hot saline solution is followed by the packing of the prostatic portion of the wound with gauze. This may be done with the finger or through a large endoscope or proctoscope inserted into the wound. If hemorrhage has been unexpectedly free, a few strips of gauze may be placed in the bladder to encourage coagulation. Perineal drainage is unnecessary. The patient, who has probably lost very little blood during the ten or twenty minutes of the operation, is put to bed with a sand bag over the pubes. In 48 hours the gauze is removed, and a tube inserted and permanent siphonage instituted, the long arm of the siphon being kept full by a slow stream from a large irrigating bottle. I usually remove the tube before two weeks have elapsed. The shortest stay of any patient in the hospital was two weeks and the average about four and one-half weeks."

The operation differs in no essential from the one ordinarily done, but as the description was a good one I have related it. If I were making a guess about an operation of this kind I should say that during the last part of the operation the patient would experience a good deal of pain, for we know the effect of the gas is quite transient. Even so if the operation can be completed it might be of great value in some cases, and it adds one more resource for which at times we are very thankful. It might be a life saving measure.

Having examined a patient and decided that the case is one best suited for a perineal operation, which one shall be selected, the median incision or the inverted V incision? The median incision looks the better and certainly does the least violence to the structures of the perineum. It also requires more knowledge, and the kind of knowledge that can be gained only by educating the fingers to tell what is being done, for in this operation you see nothing. In the inverted V incision you can at least see the posterior capsule

of the prostate and make a correct entrance into it. That is about all that can be seen, but that much is very valuable to one not accustomed to work in this region. Therefore I would recommend the inverted V operation to the beginner or for the occasional operator, and the median after he is perfectly familiar with the work. I am satisfied it is something you cannot perfect yourself in by work upon a cadaver, and it is safer and better to try first the easiest method.

I will not attempt to go into a minute description of this method, for it is too generally known to demand it, but call attention to severing of the recto-urethralis muscle, thus letting the rectum fall away, escape injury, and avoid the annoying

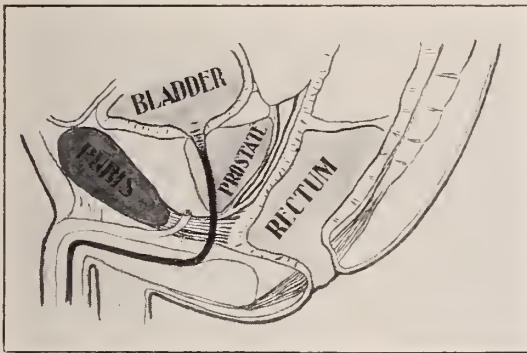


Plate 1.

complication of a fistula. To do this you must keep close to the membranous urethra as is well shown in this picture from Proust and Pilcher. Plate No. 1. Plates 2 and 3 are from MacLise and show the anatomy and anomalous distribution of the pudic artery. I think too much



Plate 2.

account is made of saving the seminal vesicles of these old men, many of whom have been incompetent for years and all with whom I have had

conversation are much more concerned about urination than they are about procreation. Erection is not dependent upon seminal vesicles, and in no way is aided by them. In the median incision after the preliminary preparation, as detailed before, a lithotomy staff is introduced and an external urethrotomy made. The index finger is then inserted into the prostatic urethra, and the capsule of the gland is opened by passing a small sickle-shaped knife along the index finger which is still in the prostatic urethra cutting one side of the capsule, and then withdrawing the knife and cutting the other side in the same manner, the finger remaining all of the time in the prostatic urethra. The capsule now spreads open at the point of incision and allows the index finger to enter, and the enucleation can now be proceeded with. If the gland is large and more room is needed the knife can again be used, making an incision into the capsule near the urethra and giving all the space desired. If the finger is kept within the capsule of the gland the rectum cannot be injured, and the hemorrhage will not be excessive, as the large venous plexus is outside the capsule and therefore escapes injury.

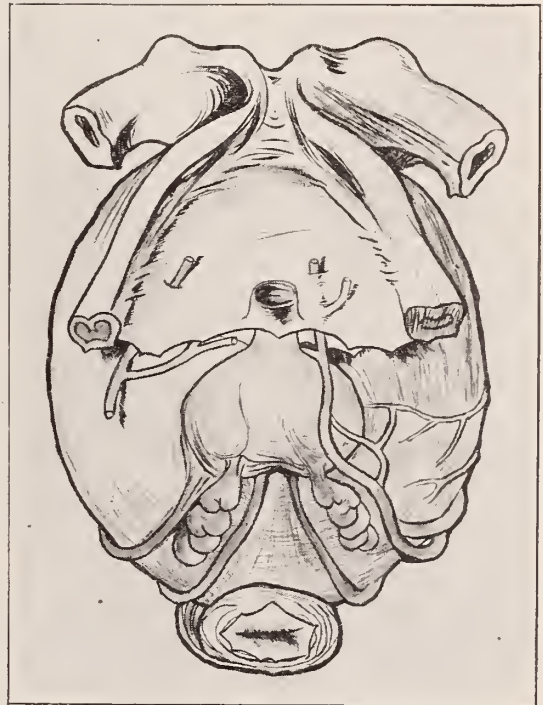


Plate 3.

The knife I here show you is the one used by Dr. Charles H. Mayo, and is intended for removing spurs from the nose. Before I saw Dr. Mayo use this knife I used an ordinary blunt-pointed bistoury, but this is much better. I am much indebted to him for this and many other

courtesies he has extended to me for many years.

Some bleeding, largely venous, will take place, and this can best be controlled by the application of gauze dipped in very hot water and applied by means of a long forceps or sponge holder. A drainage tube is now inserted, and the wound lightly packed with iodoform gauze if needed to check the oozing. If there is much tenesmus a double drainage tube may be placed in the bladder, and a very small stream of hot normal salt solution allowed to run into it. For this purpose the irrigator should be placed low so as to avoid force.

This operation I believe to be the best one we have yet had in all cases suitable for the low operation. The finger need not be inserted into the rectum, and by flexing the patient's thighs well onto his abdomen, the gland can readily be reached without the use of retractors. The steel retractors are capable of doing much harm to the mucous membrane of a bladder in many cases already damaged by disease.

Under the title, "Bloodless Perineal Prostatectomy under Local Anesthesia," Dr. Martin B. Tinker writes interestingly, as follows:

"The entire nerve supply of the perineal region comes from two main trunks: the pudic nerve, which is formed chiefly from the third cord of the sacral plexus, but also receives communicating branches from the second and fourth sacral nerves; and the long pudendal nerve, which is a branch of the smaller sciatic nerve.

"Whether the nerves supplying the different parts of the perineum come from two main trunks or from several branches it will be found practically always the case that these nerves take their origin from the main stem or stems which

lie very close to the base of the tuberosity of the ischium. The perineal branch of the pudic nerve is by far the most important. The pudendal nerve supplies only the outer region of the perineum. The region of the neck of the bladder and the prostate itself are supplied by the hypogastric plexus of the sympathetic.

"Taking the tuberosity of the ischium as a landmark the needle of the infiltrating syringe is inserted into the skin about one inch in front of and internal to the tuberosity. From 30 to 60 minims of a 0.5 per cent eucain with adrenalin are injected at a depth of from one to two inches, varying with the thickness of fat and muscle in the region of the ischio-rectal fossa in front of the tuberosity of the ischium. The deeper enucleation, a matter of but a few minutes, has to be performed in a region which cannot be reached satisfactorily with the infiltrating solution. This region of the neck of the bladder and the prostate itself are supplied by the hypogastric plexus of the sympathetic nerves, and the discomfort of enucleation is not great. In cases of extremely nervous or sensitive patients it will be found wise to use a little nitrous oxide gas or primary ether anesthesia."

In any operation upon people far advanced in life, it is of the utmost importance that they are made to sit up early. In the perineal operation this can be accomplished in five or six days. Water in some manner, either by mouth, by hypodermoclysis, or by bowel, should be freely given.

In surgery as in medicine we are often in need of every possible resource, and we welcome with delight every means that will assist us in our work which, in its final analysis, is to save life and alleviate suffering.

THE PRACTICAL UTILITY OF CYSTOSCOPY*

By M. C. MILLET, M. D.

ROCHESTER, MINN.

The misguided activity of instrument makers has been largely responsible for retarding the acceptance of cystoscopy as a reliable procedure. The multitude of instruments with their various technics of operation has created uncertainty and a reasonable doubt in the minds of many, as to the real value of cystoscopy as a diagnostic measure. Certainly the lesions sought to be diagnosed by means of the cystoscope are located, largely, in the kidney, ureter or bladder, and adjacent structures. There is a considerable number of

instances, however, in which the negative findings of cystoscopy are of undoubted aid in establishing a positive diagnosis of disease in organs physiologically far removed from the urinary apparatus. When called upon to diagnose abdominal pain or tumor, we are confronted many times, by a fragmentary or misleading subjective history. By the ordinary method of examination it may be impossible to exclude the kidney as the organ affected. Such conditions are found with especial frequency when the complaint or tumor is located in the right side. A pylorus, gall-blad-

*Read before the Sioux Valley Medical Association, at Sioux City, Iowa, January 18, 1906.

der, liver, cecum, or appendix, when invaded by disease, may simulate a right kidney. A carefully taken subjective history may suggest one of these organs as the seat of disease when a chance question regarding the urinary complaint may elicit enough testimony to cause a tentative, at least, reversal of the previous diagnosis. Cystoscopy, when undertaken in this connection for the purpose of excluding the kidney, should demonstrate a normal bladder mucosa and an open ureter on the affected side which discharges a normal amount of healthy urine. Exceptions to the above, to be referred to later, are rare, so that exclusion of the kidney is made a reasonable certainty. The suspected tumor will be found to be a kidney often enough to encourage a careful examination in all such cases.

Another class in which cystoscopy furnishes reliable and positive evidence, is that of neurotic individuals in whom the complaint is largely urinary, and closely simulates the complaint of real disease. The fact of evident neurosis is no indication that there may not be a benign tumor of the bladder or a calculus, either of which may exist without abnormal elements in the urine. The possibility of a neurosis being accompanied by real organic disease, is one of the bugbears of the profession, and any procedure which makes positive statements possible, is certainly a good service. To be able to assure a woman complaining of bladder symptoms that her bladder is normal, is a satisfaction to the physician, at least, however it may appear to the patient. A condition quite frequently met with in this class of cases, is a hyperemic area in the bladder mucosa. The spot is usually single in the posterior wall or fundus. Its margins blend gradually into the surrounding normal mucosa, and its surface is smooth and often retains the normal luster. There is none of the punched-out, ragged, rough, and uneven appearance of actual ulceration. That this red spot is not the cause of the frequent micturition may be demonstrated by a subsequent examination, when, without any amelioration of the symptoms, the spot may be found to have disappeared or changed its location. The explanation of its presence seems to be that a certain area or fold of the bladder receives more pressure than the surrounding parts during the act of emptying. When micturition occurs every few minutes for perhaps days at a time, and is, perhaps, accompanied by tenesmus, it is conceivable that this spot should become red.

Cystoscopy, when employed as an aid to the diagnosis of disease in organs other than the urinary, is certainly of service; but it is in the presence of actual disease in the urinary tract that the results of cystoscopy are of the most real value. Previous to its employment the diagnosis of surgical conditions was made largely upon

symptomatic data. Subjective symptoms are notoriously misleading and many times entirely absent. A patient may complain of a hematuria with no other symptom referable to the urinary tract. The source of the hemorrhage can certainly be discovered, and many times the nature of the disease can be accurately surmised by the cystoscope. Again, the complaint may be simply of frequency of micturition. If the urine contains pus, is it due to a cystitis or is it coming from one or both kidneys? These are questions which, many times, can be answered only by cystoscopy.

The clinical history of acute cystitis is seldom misleading, and cystoscopy, therefore, is uncalled for. When, however, the symptoms of acute cystitis do not subside within reasonable time, cystoscopy becomes indicated.

It is expected, when cystoscopy is undertaken for the symptoms of chronic cystitis, that septic kidney disease, or some of the many conditions which interfere with bladder drainage, will be found.

The common local causes for imperfect bladder drainage are calculi and tumors, benign or malignant. A calculus may often be discovered by means of a sound. Somewhat more often it will be undiscovered, though present. When calculus is coincident with prostatic disease, a knowledge of the number and approximate size becomes important. If the stone is too large to be removed through a perineal incision, without crushing, Dr. C. H. Mayo prefers its removal suprapubically; also in case the calculi are multiple, the suprapubic route is the operation of choice. If the prostatic condition indicates the advisability of the perineal operation, and the number of calculi is known, they may be safely removed from below. In such a case the operator persists in his search until the required number is obtained. It would seem to be a simple thing to remove all of the stones from a bladder. So it is, when digital examination is available, as through the suprapubic cystotomy. But when forced to rely upon instruments for conducting the search, as is often the case in the perineal operation, it has been found possible to leave one or more stones undetected. Cystoscopy, then, becomes the certain means of diagnosing the presence or absence of vesical calculi, and also may aid in determining the operation of choice.

Tumors, benign or malignant, are located, and their relation to the ureteral openings and extent of bladder involvement is estimated as accurately as may be. Such knowledge, not only may determine for or against operation, but makes prognosis, in either event, more accurate. Cystoscopy places vesical tumors in practically the same category for diagnosis as tumors on the exterior of the body, in that it makes them capable of actual inspection. They may not be palpated, but valu-

able impressions as to consistency may often be obtained, and with specially constructed instruments fragments of the tumor may be removed for microscopical examination. Ordinarily, however, the diagnosis must be made on the gross appearance and clinical history. The examination may demonstrate such extensive and palpable malignancy as to preclude the possibility of operative relief. Exploratory operation, with its resulting fistula, may thus be avoided.

Extravesical conditions, while perhaps not producing actual bladder disease, from pressure or distortion, may seriously interfere with its function. Pelvic tumors, inflammatory processes, and hernia may cause bitter urinary complaint. Their causative relation may often be correctly surmised without the aid of cystoscopy. But actual inspection of the interior of the distorted viscus, with perhaps the discovery of a fistulous opening from a pelvic suppuration, is positive evidence which is to be sought for at all times. A simple uterine retroversion may so distort the base of the bladder as to make complete emptying difficult or impossible. The cervix, by pressure down and forward, elevates the floor of the bladder in the median line, producing two lateral pouches not unlike the pouch of prostatic hypertrophy. Relief of bladder symptoms is practically certain to follow correction of the retroversion.

Ordinarily, the indications for operation in prostatic disease are so manifest by simple digital examination of the rectum that cystoscopy might well be dispensed with were it not for the possibility of coincident intravesical conditions, such as calculus or tumor, a knowledge of which should be obtained previous to operation. In about ten per cent of prostatic cases the subjective complaint may indicate grave trouble, yet digital examination may reveal little or no prostatic enlargement. The case, from its history, being undoubted prostatic disease, becomes, after digital examination, problematic. The cystoscope may demonstrate a median lobe, prostatic bar, or lateral lobes which have hypertrophied upward and forward, compressing the posterior urethra laterally. These enlargements may be small, but so situated as to produce partial or complete obstruction; and in no other way are they so certainly discovered as by cystoscopy.

Renal surgical disease may be manifest by definite localizing signs, such as pain or tumor. Again the disease may have its beginning and progress to complete destruction of kidney function without, at any time, producing a localizing symptom. In a series of 58 cases of renal tuberculosis in the clinic at St. Mary's Hospital, Rochester, Minn., 30 per cent had no localizing pain and 17 per cent had no pain or tumor or other symptom to act as a guide to the affected kidney. When the symptoms are positive and the diseased

kidney can be located with certainty there remain the questions to be answered, of amount of kidney function still retained by the disabled organ and the presence and condition of the fellow kidney, before operation can be intelligently advised or undertaken.

A dry ureter, or one from which no urine is discharging, may indicate congenital absence of a kidney, a dead or functionless organ, or some form of ureteral obstruction. Passing a catheter into and up such a ureter may demonstrate the exact condition present, as impacted calculus, stricture, or kinking. But many times it is enough to know that there is no urine, the diagnosis then becoming plain in the light of the other clinical findings. Unless the condition is acute, a dry ureter should be accompanied by a ureter on the opposite side discharging rather more often and copiously than normal, indicating a compensatory hypertrophy of the fellow kidney. Such hypertrophy may produce a distinct kidney tumor, and too often is surmised to be a pathological condition. Such is especially apt to be the case in tuberculosis of one kidney which has been painless and without tumor formation until more or less complete loss of function has obtained. The patient's attention may be directed to the hypertrophied kidney by pain, due to some acute and perhaps trivial cause, and the true condition, in this manner, may be overlooked. The failure of cystoscopy to clear up such a case would be due to gross and extensive bladder disease, in which no form of an intravesical separator could be relied upon, and if the symptoms justified double exploratory incision would become indicated.

Such conditions as perinephritic abscess, the early stages of hypernephroma, and the above-mentioned compensatory hypertrophy, may not interfere with the normal character of urine from a suspected side. These are the conditions previously referred to as the exceptions to the general proposition, that a tumor in the kidney region is not the kidney if the normal amount of healthy urine is found to be coming from that side. In surgical kidney disease, then, we expect to and usually do find blood or pus in the urine. If the foreign elements are macroscopical in amount the cloudy character of the urine can be demonstrated as it escapes from the ureter. If blood is microscopical in amount there need be no hesitancy in catheterizing both ureters. In the presence of infection more caution should be observed, and other methods of securing the urine may be applicable. Double catheterizing may be forced by the failure of other methods to make a diagnosis in a case in which failure to diagnose may mean invalidism and perhaps death.

The manner in which the contents of the ureter are discharged into the bladder is often sugges-

tive. Urine which comes with a rush in distinct jets indicates an actively functioning kidney and an open and healthy ureter. If the force or frequency is unduly increased it may mean a hypertrophied kidney or one working under the influence of some local irritant, such as calculus or localized abscess; most commonly, however, it indicates a transient hypersecretion of neurotic origin. In case the urine creeps out of the ureter in a more or less constant dribble it points to a ureter which has lost its peristaltic function through disease of the walls or to some form of obstruction usually low down. The peristaltic wave is lost at the point of obstruction, and the segment of ureter is too short to recover it.

If, instead of urine, the ureter is discharging pus the flow is apt to be more or less continuous for a considerable time and can be augmented, many times, by bimanual pressure of the kidney region. In such cases the cystoscopic picture is not unlike the discharging of an abscess through a stitch hole. Such a condition obviously indicates a functionless kidney.

The bladder mucosa and ureteral openings may present a normal appearance even in the presence of long standing and extensive kidney disease. Especially may this be true in non-tubercular kidney lesions. Even in tubercular cases it is not unusual to find the bladder mucosa a pale pink, covered with a network of blood vessels which indicate absence of inflammation. Such a condition may be found when, from the clinical history, it is evident that tubercular disease has existed higher up for many months. In about 70 per cent of tubercular kidney cases, however, some form of bladder involvement will be found. The initial lesions seem to be hyperemic spots of varying size with clear-cut edges surrounded by healthy mucous membrane. If the renal disease is unilateral these spots are apt to be confined to the neighborhood of the affected ureter or to that half of the bladder. These signs are often the only guide to the affected kidney. Later these spots ulcerate and coalesce until the whole bladder is involved, contraction takes place, and the whole surface is red and, in spots, bleeding and covered with granulations. Such

a condition may exist and the renal disease still be confined to one side.

It is in these contracted and actively ulcerating bladders that the greatest difficulties are encountered. The ureteral openings may be hidden by granulations or so distorted by ulceration as to make their recognition difficult or impossible. Often the ureter of the affected kidney will be drawn outward and upward toward the kidney so as to distinctly pouch or funnel the bladder-wall, the ureter then opening into the apex of the funnel. The deep muscle injection of indigocarmine, in addition to its possible value in estimating kidney function, may be of service in locating the ureteral openings. Following the injection, the urine becomes within a few minutes a deep blue, and the jets of blue urine may lead to the ureter, when otherwise it might be overlooked. The appearance of the ureteral meatus varies considerably in both health and disease. A knowledge of what constitutes a normal or healthy appearance, as opposed to disease, is important, for often the appearance of the meatus may be the correct guide to the diseased kidney. But unless catheterizing of the ureter is contraindicated, it would seem that the time spent in speculating upon the probable nature and extent of the disease, as evidenced by the appearance of the ureteral meatus, might better be employed in securing a specimen of the actual work of the kidney, namely, the urine, by means of the ureteral catheter. There is one condition, however, from the frequency with which it is met with, that deserves special mention. It is the open stiff-walled opening or "golf-hole" meatus, as described by Hurry Fenwick. It is found in tubercular kidney disease with special frequency, but may accompany any long-standing condition of pyonephrosis. It signifies extensive and practically complete kidney destruction.

To find such a ureteral meatus, with perhaps a normal one on the opposite side, in a case complaining simply of frequent micturition, with perhaps no localizing pain or tumor or other sign which would aid in establishing a diagnosis of kidney disease, is a fitting example of the practical value of cystoscopy.

INTESTINAL PERFORATION IN TYPHOID FEVER, WITH REPORT OF CASES*

BY WALTER COURTNEY, M. D.

BRAINERD, MINN.

IN TWO PARTS—PART II

In certain cases where the peritonitis is limited, and limiting adhesions and walling-off have occurred, abscesses may appear and require to be dealt with weeks, and it may be, months afterwards.

In form the perforation may be large and irregular; large and circular; small and cribriform; or it may be slit-like or oblong. The large circular ulcers are thought to be due to sloughing; the cribriform to ulceration; and the slit-like to mechanical traumatism. They are usually opposite the mesenteric attachment; but, though rarely, they may open between the folds of the mesentery, and cause a retroperitoneal abscess.

The perforation, as a rule, is single. In our five operated cases, however, it was single in only two, in two of the cases there were two perforations, and in one, three.

The site of perforation is usually found in the lower end of the ileum within 12 to 18 inches of the cecum. It may infrequently occur at any point along the digestive tract. It is not infrequently seen in the cecal region of the colon, including the appendix. Typhoid ulceration (rarely with perforation) may be found widely scattered along the digestive tract. We have a number of well authenticated cases of typhoid ulceration of the esophagus and consequent stricture. Mitchell reports eight cases in the Johns Hopkins Hospital Report, Vol. 8. Personally, I have seen two cases of esophageal stricture following well authenticated typhoid fever. In neither could the stricture be charged to traumatism occurring in the course of the disease. In both cases they supervened before convalescence was established. The first case was in a young girl of twenty, seen in consultation with Dr. F. J. Campbell, of Fargo, N. D., about ten years ago. The stricture was located about the junction of the middle and upper third of the esophagus. Soon afterwards she developed an empyema which so reduced her strength that she could not undergo an operation for the stricture, which still persisted, and she died a few weeks later. The second case, also in a young girl of about twenty, was seen in consultation with Dr. John H. Dunn, of St. Cloud, about three years ago. The stricture was located at the junction of the middle and lower thirds. Later it was found necessary to do a gastrostomy to assist in overcoming the stricture. The

patient, I am informed, made an excellent recovery.

SYMPTOMS

Perforation.—In typhoid fever perforation rarely occurs during the first week of the disease; the majority of cases are seen during the second and third weeks; it may, however, occur at any time during the latter part of the disease and convalescence. It is not infrequently seen during a relapse. The so-called preperforative symptoms are usually too vague and indefinite to be of much practical value to the average practitioner doing his work outside of hospitals.

Pain.—The earliest reliable symptom of perforation is pain, which usually is complained of in the cecal region; it may, however, be referred to the epigastric or pelvic regions. Occasionally pain is complained of in the genitals. The character of the pain may vary from a severe stabbing nature to more or less of a dull ache. Often its severity will cause the patient to cry out from his suffering. Patients who are irrational may fail to complain of pain. Occasionally with pin hole perforation and limited peritonitis there may be no complaint of pain. (See Case II.)

Rigidity.—The next most important symptom is rigidity of the abdominal muscles, following quickly after the appearance of pain. This rigidity may be confined to the right internal and external obliques and the recti muscles, or the whole abdomen may be rigid.

Tenderness.—Tenderness is the next symptom of marked importance, and is usually found in the cecal region, though it may also be adduced by pressure toward the epigastric or pelvic region. All other symptoms are of varying importance.

Vomiting.—This is a symptom that may occur coincidentally with, or soon after, the appearance of pain. In some cases of typhoid fever, however, vomiting is a symptom that appears early and frequently throughout the acute stage of the disease. In such a case its value as a symptom of perforation would not be of marked importance.

Temperature.—In quite a number of cases of perforation there is often a remarkable drop of temperature, sometimes to near the normal point. With the advent of peritonitis the temperature again rises.

Pulse and Circulation.—The shock of perforation and peritonitis usually lowers the force of

*Read before the Minnesota State Medical Association, June 1, 1905.

the pulse, while the rate is greatly increased, often from the usual of 90 to the unusual of 130 or more. The skin of the face and hands may appear pallid and even somewhat cyanosed, and frequently is covered with profuse perspiration.

Respiration.—Respiration may be somewhat quickened, but is not likely to become costal in character, until peritonitis is established.

Facial Expression.—In perforation the expression of the face is often marked by anxiety, suffering, and general distress to an extent which might be called characteristic, almost Hippocratic in type.

Liver and Movable Dulness.—Liver dulness prior to perforation must have been carefully noted, from time to time, to be a symptom of important value. Pre-existing tympany may have reduced the area of liver dulness almost to the vanishing-point, before the admission of free gas into the peritoneal cavity. Movable dulness in the flanks is not likely to be present until peritonitis with effusion has appeared. Hence it could only be a symptom of late value.

Leukocytosis.—Leukocytosis may be mentioned as a symptom of possible value. To be of practical utility, however, a leukocyte count would necessarily have to be made hourly as leukocytosis would not appear until peritonitis had supervened. To wait for this might be a waste of valuable time.

To sum up. Given a case of typhoid fever with clinical symptoms pathognomonic of the disease, backed up by Widal's serodiagnosis, if possible, and presenting after the first week, the three cardinal symptoms of pain, rigidity, and tenderness in the cecal region, supplemented by some of the less valuable symptoms, it will be, not only expedient, but reasonable to diagnose intestinal perforation.

Osler's scheme for the observation of perforation symptoms should always be at hand for the observance of internes and nurses.

DIFFERENTIAL DIAGNOSIS

It may be necessary, not infrequently, to differentiate intestinal perforation of typhoid fever from acute appendicitis, with or without perforation; from intestinal hemorrhage of typhoid; from typhoidal peritonitis without perforation; from peritonitis due to tubal disease; from gangrene or perforation of the gall-bladder; from perforative gastric ulcer; and from suppurating mesenteric glands.

Time will not permit me to consider the symptoms, conditions, and features that might be adjuce in differentiating each of the above. Cumston, of Boston, in an extended review of "The Clinical Aspect and Differential Diagnosis of Appendicitis and Typhoid Fever" (American Journal of the Medical Sciences, May, 1905) terminates his article by saying: "In closing, I think I can sum up in a word all that has been said in

this paper, namely, that every time an appendicitis exists, either alone or associated with typhoid, an operation is indicated." I believe the same conclusion, namely, operation, would hold good for all the other conditions, with the possible exception of intestinal hemorrhage, and even this has been surgically treated with reported success.

PROGNOSIS

The prognosis in intestinal perforation of typhoid without operation is almost hopeless. The chances for recovery do not exceed 5 per cent under the most favorable conditions. With operation the prognosis will depend in a large measure on early surgical interference, the extent of peritonitis, the physical condition of the patient, and the absence of secondary perforation and intestinal hemorrhages. Some writers claim that there should be 50 per cent of recoveries if the operation is undertaken within the first three hours. With our marked improvements in the treatment of peritonitis these hopes would not seem to be too sanguine. In the Johns Hopkins Hospital they secured 30 per cent of recoveries from all their operations. Of our own fatal operative cases one that was operated on 19 hours after symptoms of perforation, lived for three days, and succumbed to general peritonitis; another lived ten days.

TREATMENT

All cases of typhoid fever that have suffered intestinal perforation, should immediately, on diagnosis, be treated by laparotomy, and the only deterrent to operation should be a moribund condition of the patient. Wilson has well said: "The courage to perform it (operation) will come of the knowledge that the only alternative is the patient's death".

Anesthetic.—We have used local anesthesia with cocaine, and general anesthesia, with ether, and our personal preference is decidedly for the latter.

The Incision.—The incision that we have found the most useful and satisfactory is the one made through the right rectus muscle and opposite the cecal region. After gaining entrance to the peritoneal cavity, the appendix and cecum, even the ascending colon, should be thoroughly examined; and next, the lower portion of the ileum beginning at the cecum. When the perforation is found, it is best to close it with a suture of linen or silk; if small, it can be readily closed with a purse string suture; if large, Lembert's, Halstead's mattress, or Cushing's right angled sutures may be used. In some instances it will be well to strengthen it with a second tier. There is a difference of opinion among writers as to whether the opening should be closed in the longitudinal or transverse direction of the bowel. Probably this is a matter of no particular moment unless the opening is so large that

the necessary suturing may diminish the lumen of the bowel to dangerously narrow proportions, when the question of resection may have to be considered. If there are other ulcers presenting a perforating appearance, it would be wise to place reinforcing sutures in order to prevent future accidents.

If the appendix is inflamed, as it frequently is, it should be removed, even though perforation is not present. In our last three cases it was found decidedly inflamed, and in each instance it was removed.

The toilet of the peritoneum is important, and probably would be the next step in the progress of the operation. If there has been considerable escape of fecal matter, irrigation with normal salt solution would be of value. If fecal matter is not present, and the peritonitis is confined to the region of perforation or has gravitated to the pelvis, the effusion fluid may be withdrawn by a suction syringe or removed by careful sponging. Tubular drainage should be introduced to the bottom of the pelvis, probably through a stab wound on the left, as well as through the operation wound on the right. This should be supplemented with the necessary amount of Penrose and gauze drainage. At this time the sutured portion of the bowel should be brought opposite the operation wound, and maintained there by gauze or a few stitches of ten day catgut. This position of the bowel will be of decided advantage in case the suturing should yield and leakage result. Such portions of the wound as are unoccupied by drainage may be closed with through-and-through sutures. After the application of a voluminous dressing and the return of the patient to bed, he should at once, or as quickly as possible, be placed in Fowler's position, to allow gravitation of effusion fluid into the pelvis, where the drainage has been placed. The after-treatment will consist of the necessary surgical attention and such general typhoid treatment as may be applicable.

If positive symptoms of post-operative perforation occur, we should not hesitate, if the patient's condition will permit, to re-open the wound or perform a new laparotomy, and deal with the conditions found. Cushing (Johns Hopkins Hospital Report, Vol. 8) reports a case with recovery in a boy of nine years, where laparotomy was performed three different times: 1st, for perforation; 2nd, for supposed perforation, and 3rd, for acute intestinal obstruction, when a new perforation was also found.

I am greatly indebted to Dr. W. H. Buskirk, for his valuable and painstaking assistance in the examination and selection of data from our hospital and clinical records for the purposes of this article.

REPORT OF CASES

Case 1. Male, age 26, admitted July 29, 1900. Diagnosis, typhoid fever. Temperature 102.8°, pulse

80. No history recorded of condition prior to admission. Course of disease moderately severe throughout; temperature running from 101.2° to 102° in the morning and from 103° to 104.8° in the evening, and the pulse averaging 85 and never going above 98; some diarrhea; perspired freely at times.

August 9th, 7:15 a. m. Temperature 102.2°, pulse 92; suffering severe pain in abdomen. 10 p. m. Temperature 101°; pulse 104; persistent vomiting of dark green material with undigested milk.

August 10th, 7 a. m. Temperature 97.2°; pulse 100; still in great pain. 4 p. m. Temperature 104°; pulse 130; covered with cold sweat. 6:30 p. m. Temperature 101.4°; pulse 140; cold sweat.

Patient gradually sank, and died August 11th, at 8:45 p. m. Perforation on the 14th day after admission; death in 48 to 50 hours after perforation. No autopsy.

Case 2. Male, age 30, admitted February 4, 1891, having been sick one week. Diagnosis, typhoid fever. Had a moderate run of fever with temperature running from 100.8° to 103.2°, pulse averaging about 90; no diarrhea or hemorrhage; general condition good.

March 4th, 8 a. m. Some pain in abdomen; two hemorrhages from nose; vomiting during late afternoon; temperature 100° in morning, rising to 103° at 1 p. m. and dropping to 102° at 8 p. m. Pulse 98 at 8 a. m., 100 at 1 p. m. and 112 at 4 p. m. Symptoms grew rapidly worse, and perforation was diagnosed. 9 p. m. Laparotomy; median incision; fecal matter found scattered throughout the peritoneal cavity; a perforation irregular in shape and nearly three-fourths of an inch in diameter, was found in the ileum about 15 inches from the cecum. An attempt at suturing failed, because of the friable and softened condition of the intestinal walls. Patient being in collapse, only drainage was inserted in wound.

He was returned to bed. His condition grew steadily worse, and he died at 4 a. m. March 5th, twelve hours estimated after perforation on the sixteenth day of disease.

Partial autopsy revealed general peritonitis, and a second perforation of the bowel 6 inches above the one found at operation.

Case 3. Male, aged 43, admitted October 17th. Sick 10 days. Diagnosis, typhoid fever. Condition not bad; temperature 101° to 102°, pulse 80 to 92 on day of admission.

October, 18th. 2:15 a. m. Chill; temperature 103.2°, 3 a. m. Severe pain in abdomen, continuing during day. 4 a. m. Temperature 104.6°; pulse 98. 8 p. m. Temperature 104°; pulse 106. October 19th, 4 a. m. Temperature 102.4°; pulse 104, 8 p. m. Temperature 100°; pulse 112, feeble; vomited several times during day, and was sweating profusely; violent hic-cough; pain continued severe during day.

October 20th. Condition grew worse during early part of night. 4 a. m. Temperature 100.2°; pulse 124, and growing more feeble and rapid, 9:30 a. m. Vomiting. 9:38 a. m. Death.

Perforation occurred in the 11th day of disease; death, 55 hours later. No operation. No autopsy.

Case 4. Male, aged 28, admitted August 23, 1896. Sick seven days. Diagnosis, typhoid fever. Had a severe run of fever with temperature from 102° in the morning to 104.8° and 105° in the evening; pulse from 106 to 126; slight diarrhea; some vomiting; mental apathy with some delirium.

September 2d. Patient has been in marked typhoid state; delirious; abdomen distended. At 7:30 p. m. respiration very irregular; involuntary bowel movements; temperature 101.2°; pulse 120; respiration 24. 12 midnight. Axillary temperature 104°; pulse 132; respiration 32.

September 3d. Temperature varied from 103° at 4 a. m. to 104° at 4 p. m.; pulse 120 to 130; respiration 26 to 30; delirious, and abdomen distended.

September 4th. 4 a. m. Temperature 102°; pulse 120, respiration 34. 4 p. m. Temperature 103.2°; pulse 144; respiration 44; symptoms of previous day more marked.

September 5th. All symptoms increased in severity, and patient died at 3:35 a. m.

No operation. Partial autopsy showed abdominal ulcers, one of which had perforated. There was also considerable peritonitis.

Case 5. Male, aged 25, admitted October 14, 1897. Sick two weeks. Diagnosis, typhoid fever. Ran a light course, temperature averaging 103.6° in the evening and pulse not over 80.

October 23d. Hemorrhage from bowel; no symptoms of collapse; temperature fell from 101.8° to 98.8°; and pulse from 76 to 60. Patient did well for several days after hemorrhage, temperature and pulse running as before.

October 30th. 5:30 p. m. Sharp pains in abdomen during passage of stool; respiration increased; face pinched in appearance. Patient lies in bed with knees drawn up; temperature fell at first, and then rose. Perforation was thought of, but surgeon not warned until next morning.

October 31st. Operation at 11 a. m. 19 hours after first symptoms of perforation. Median incision below umbilicus; on opening abdomen a large amount of gas and fecal matter escaped through the wound; intestine covered with lymph deposit and numerous adhesions; in the ileum, about 6 inches from colon, a large perforation was found, which would admit end of finger; edges well defined. Other unperforated ulcers were apparent through the bowel wall. Peritoneal cavity sponged dry, and flushed with normal salt solution; tubal drainage and wound partly closed.

November 1st. Condition critical; some vomiting, 4 a. m. Temperature 101°; pulse 134, 4 p. m. Temperature 101°; pulse 130 and weak.

November 2nd. 4 a. m. Temperature 101°; pulse 144, 4 p. m. Temperature 104.2°; pulse 160. Patient grew rapidly worse, and died at 8:30 p. m. Autopsy showed very severe general peritonitis with extensive adhesions. Suturing in the bowel intact. Perforation occurred in the 30th day of disease; and death 75 hours after perforation and 56 hours after operation.

Case 6. Male, aged 37, admitted October 22, 1898. Sick ten days. Diagnosis, typhoid fever. At the time of admission there were tympanites, some vomiting, and rose-spots present. Case ran a light course after admission to the hospital until convalescence began. Had a relapse beginning November 4th, but it was not severe. On November 9th. developed a phlebitis.

November 12th. During day temperature has been running high; pulse increased. 4 a. m. Temperature 103.6°; pulse 106, 4 p. m. Temperature 10.°; pulse 108, 9:30 p. m. Sudden acute abdominal pains; cried out in agony; abdomen rigid; extremities and face cold and clammy; pulse rapid, feeble, and fluttering; pain referred to genitals.

November 13th. 4 a. m. Temperature 102°; pulse 122. 4 p. m. Temperature 97°; pulse 122. Severe pain throughout the day; vomiting; delirium; cold sweat; temperature sub-normal all day, running as low as 95.6°; condition grew worse, and patient died at 10:30 p. m.

No operation because of severe phlebitis and low condition of patient. Autopsy showed perforation of ileum 18 inches from ileocecal valve; free fecal matter in abdominal cavity, and turbid fluid; numerous ulcers with softened bases, one black and almost perforated; clot in femoral vein extending into the pelvis.

Case 7. Male, aged 24, admitted September 23, 1902. Sick two weeks. Diagnosis, typhoid fever. Rose-spots present on admission; severe course after admission; temperature running from 102.6°, with pulse 96 in the morning, to temperature of 105° and pulse 116 in the evening.

Sept. 29th 7 a. m., Temperature 102°; pulse 100; 8 p. m. Temperature 103.2°; pulse 120; condition of patient same as on former days until 8 p. m., when hemorrhage from bowels occurred.

Sept. 30th 4 a. m. Temperature 101°; pulse 100; 3 p. m. Temperature 101°; pulse 144; blood count shows 7,894 leukocytes; condition serious; pulse is rapid and weak; complains of no pain; abdomen rather rigid and somewhat tender on pressure; liver dullness diminished.

Oct. 1st. 8 a. m. Axillary temperature 98°; pulse 120. 8 p. m. Axillary temperature 101.4°; pulse 150; has vomited during day; death 11:30 p. m. Perforation occurred on the 19th day of disease. No operation (no reason given in clinical history). Death occurred in about 30 hours after perforation. No autopsy.

Case 8. Male, aged 20, admitted Jan. 23, 1903. Sick one week with prodromal symptoms of typhoid. Diagnosis, typhoid fever. General condition on admission rather bad; abdomen distended; pronounced typhoid mental condition; at 7 a. m. temperature 103°; pulse 72; at 8 p. m. temperature 104°; pulse 94. Patient had two hemorrhages on Jan. 24th; one on Jan. 25th; another on Jan. 26th, and also slight chill; another on Jan. 27th. During this time temperature continued high, and pulse running from 78 to 84; no diarrhea.

Jan. 31st. General condition about the same. At 8:30 p. m. taken with sudden severe pain in abdomen in right iliac region; chill at 9 p. m., abdomen distended, and general abdominal tenderness more marked at McBurney's point; pulse rapid and weak; facial expression anxious and drawn; at 10:30 p. m. (diagnosis of perforation having been made) operation was performed under cocaine until bowels were exposed, then ether was given. Incision through right rectus; bowels much distended; numerous adhesions around appendix, which was somewhat thickened and congested. Appendix ligated, and stump turned in by means of formalized catgut; a small pinhole perforation found in colon within one inch of appendix; perforation closed with Lembert sutures of silk. An ulcer was found 4 in. from the ileocecal valve with gangrenous look and threatening perforation; reinforced with suture of silk. There were no signs of peritonitis and no increased amount of fluid in the peritoneal cavity. Only local drainage, and wound was closed up to drain. For several days after operation patient's condition was quite good.

Feb. 3rd, 4 a. m. Axillary temperature 98.8°; pulse 80. At 8 p. m. axillary temperature 98.6°; pulse 92; some distension present, and considerable vomiting on this day.

Feb. 7th. Condition serious. 4 a. m. Temperature 100.8°; pulse 120. 8 p. m. Axillary temperature 104.6°; pulse 128 and weak; abdomen distended and tender; no infection of abdominal wound.

Feb. 8th. Condition serious. Temperature and pulse about same as day before; has had blood in stools twice to-day; not much reaction of temperature and pulse. 4 a. m. Temperature 103.8°; pulse 130. 8 p. m. Temperature 104°; pulse 130.

Feb. 9th. Patient's condition much worse; temperature being uniformly high, and pulse rapid and weak.

Feb. 10th. Temperature reached 105°, and axillary pulse 150. Feb. 11th patient died at 12:20 a. m.

Complete Autopsy.—Examination, negative, except in abdomen; bowels found covered with purulent exudate, but not distended; the catgut suture

Case No.	Age	General Course of Disease	Bowels	Bowel Hemorrhage	Tympanites	Day of Perforation	Manner of Onset	First Symptoms	Abdominal Pain	Chill	Sweating	Vomiting	Collapse	Temperature	Pulse	Respiration	Condition of Abdomen	Liver Driftiness	Leukocytes	Operated	No. hours after perf.	Result	Autopsy with Findings	Condition of appendix at operation	No. and location of perforations at autopsy or operation
1	26	Moderately severe	Diarrhea not severe	None	Not marked	14th	Sudden	Severe pain in the abdomen	Yes	No	Profuse cold sweat	Yes, a dark green material	No	Fell from 102.2° to 97.2°; then rose to 104.4°	Rose from 92 to 140	Somewhat quickened	Tender on right side	None noted	No count made	No		Death in from 48 to 50 hours	No autopsy		
2	30	Mild	Constipation	Two hemorrhages from nose on day of perforation	"	16th	"	"	"	"	No	Yes	"	Rose to 103° then fell to 102°	Rose from 98 to 112	Not noted	Extremely tender in right iliac region	Not mentioned	"	Yes	6	Death in 12 hrs	Partial autopsy	Not reported	Two in ileum 15 and 21 in. above cecum
3	43	Mild	No diarrhea	None	"	11th	"	Chill	Yes, very severe	Yes	Yes	Yes	"	Rose to 104.6° then fell to 100°	Rose from 98 to 124	Rapid; violent hic-cough	Noticeable tenderness in right iliac area	"	"	No		Death in 55 hrs.	No autopsy		
4	28	Severe with mental apathy and delirium	Slight diarrhea	"	Yes	17th	With marked typhoid state, abdomen distended and involuntary bowel movement of small watery stools	Distension of abdomen; irregular breathing; subjective symptoms concealed.	No; comatose	No	No	Yes, before onset of perforation	Yes	By axilla; rose 101.8°, 104°, later fell to 103.2°	Rose from 120 to 144	Rose from 24 to 44	Distended	Abolished	"	"		Death in about 56 hours	Partial autopsy, showed typical typhoid ulcers, intestines matted together with many adhesions. (One perforation found in ileum 12 in. from cecum.)	Very adherent and inflamed	One in ileum 12 in. above cecal junction
5	25	Mild	No diarrhea	From bowel severe 7 days before perforation. Temperature fell 3 degrees	Not marked	30th	During bowel movement sudden, severe pain in abdomen, diffuse	Severe, cramp-like pain lasting only a few minutes	Yes, very severe diffuse at first. Later localized in right iliac fossa	"	"	Yes	No	Fell at first to 99.8° then rose to 102.2°	Rose from 84 to 106	Very rapid and shallow hic-cough	Distended and extremely tender	Obliterated	"	Yes	19	Death in 75 hrs after perforation and 56 hours after operation	Partial autopsy. Bowels covered with deposit of lymph; perforation closed and stitches holding; appendix adherent	Much inflamed and adherent, not removed at operation. (Patient in bad shape.)	One located in ileum 6 in. from colon. Wound admitted end of finger, only perforation found. Free fecal matter in cavity at operation
6	37	Mild, with early convalescence Relapse, complicated with Phlebitis	"	None	Yes	31st day of relapse	Sudden, severe abdominal pain, cried out in agony, face and extremities cold and clammy; pain in genitals	Severe pain in abdomen	Yes; diffuse, referred also to penis and scrotum	"	Yes	Yes, early in disease	Yes	High at first, 104°; fell quite rapidly to 95.6° before death	Rose from 106 to 122, very weak	Shallow and very rapid	Distended; very rigid	"	"	No		Death in 25 hrs	Partial autopsy abdominal cavity contained free fecal matter; a large amount of turbid fluid, many ulcers with softened bases, 1 perforating, clot in femoral vein	Thickened and adherent	One found at autopsy; located 18 in. from ileocecal valve; large size
7	24	Severe	"	One on day of perforation	Not marked	19th	Gradually increasing distension and tenderness. Hemorrhage from bowels	Rigid abdomen; tender on pressure; rapid pulse	None	"	No	Yes, late	No	No change	Rose from 100 to 150	Rapid	Bilard-like very tender	"	7,894, made immediately after onset of symptoms	"	"	Death in 30 hrs.	No autopsy		
8	20	Severe. Marked mental apathy	"	Yes, five on different days preceding perforation	Quite marked	48th	Sudden	Severe pain near McBurney's point, chill	Yes; some in right iliac fossa	Yes	"	"	"	Rose, then fell, after operation fell to 97° then rose to 105°	Rose slightly before operation. Markedly after to 150	No change	Partly distended hard	No marked change	12,224 made just after onset of symptoms	Yes	2	Death in 10 days and 4 hours after perforation	Complete autopsy, negative except in abdomen; purulent exudate; catgut suture given way with opening into bowel free. No attempt at repair	Very adherent, much thickened; removed at operation	One very small one found 2 in. from ileocecal valve
9	30	Severe. High temperature and delirium	"	None	None, until late in disease	17th	Sudden; severe abdominal pain, lips pallid, very restless, skin cold and clammy	Paroxysmal pains in abdomen	Yes; severe in right iliac fossa	No	Yes, on extremities	No	Yes, very marked	Fell from 102° to 98.4°	Almost imperceptible, rose from 90 to 134	Rapid and shallow, rose to 40	Very rigid and tender	Nearly obliterated	No count	No		Death in 55 minutes after perforation. (Approximately)	No autopsy		
10	24	Mild with rapid convalescence, Relapse severe	"	"	Not marked	52d, 10th day of relapse	Sudden; severe colicky pain, lids pallid, face drawn and expression anxious	Severe paroxysmal pain in right iliac fossa	Yes; severe and diffuse at first, later localized on right side	"	Yes, slightly	"	No	No marked change	Rose after operation from 81 to 116. No change before	Rapid and shallow; thoracic	Very rigid, moderately distended	Not obliterated	No count after perforation	Yes	2½	Recovery	Very mucin inflamed; removed at operation	Two small pinpoint perforations in ileum close to colon. One other large one 1½ in. in diameter found on ileum 13 in. from colon and had pinched out appearance	
11	43	Mild. Mental condition rather dull	"	"	Quite marked	15th	Sudden; severe pain in abdomen with signs of collapse	Severe abdominal pain chill	Yes; diffuse at first, later more on right side	Yes	Profuse cold sweat	"	Yes	No change before operation. After operation it rose to 102.4° then fell to 97°; then vacillated	No change before operation, after operation it varied between 130 and 148. Was 82 and 90 before perforation	Rose in frequency; very shallow	Moderately distended; very rigid, painful on pressure	"	No count	"	3½	Death in 75 hrs. after perforation and 7½ hours after operation	No autopsy	Much congested and inflamed; removed at operation	Two very small (½ in.) perforations found within 8 in. of colon. One pin-hole perforation 15 in. above cecum closed by plastic lymph and adherent omentum and surrounded by old peritonitis. Free pus in peritoneal cavity

which had closed the stump of the appendix had been absorbed, and as there were no attempts at repair the stump was open. The perforating ulcer, which had been reinforced with silk sutures, had held firmly. The peritoneal exudate was much more marked in the right iliac fossa than elsewhere. No fresh perforations. Perforation occurred on 48th day, and death in ten days and four hours after operation.

A mistake was made in this case in using catgut instead of silk for closing the appendiceal stump, and later in not reopening the wound for explanation.

Case 9. Male, aged 30, admitted Oct. 28, 1904. Sick ten days. Diagnosis, typhoid fever. Had nose-bleed, headache, and other characteristic symptoms of the disease, which ran a severe course, temperature ranging from 102°, with pulse of 96 in the morning, to 104°, with pulse of 104 in the evening; slight vomiting and some delirium; no tympanites until Nov. 1st.

Nov. 24th. Axillary temperature 98.4°; pulse 132 at 7 a. m.; respirations 40; sweating. 8:45 a. m. Sudden severe abdominal pain; in paroxysms; expression anxious; very restless; lips pallid; extremities cold and covered with cold sweat; abdomen rigid and extremely tender, most marked in right iliac fossa; pulse rapid, thready, and almost imperceptible. 9:40 a. m. Death.

Perforation occurred on the 17th day; death after perforation estimated in 55 minutes. No operation. No autopsy.

Case 10. Male, aged 24, admitted Dec. 6th, 1904. Was admitted primarily for injury, but complained of being sick for two or three days; developed a light run of typhoid; rose-spots present; temperature running from 100° to 102°, and pulse practically normal; complained early in disease of some pain in the right fossa; blood count, Dec. 9th, leukocytes 10186, and on Dec. 15th leukocytes 11457. Had a typical convalescence beginning Dec. 24th; temperature normal all day Dec. 25th; diet gradually extended; was up and about. On Jan. 17th had a well marked relapse with all symptoms much more severe than during previous illness.

Jan. 19th temperature 100.8°, with pulse 104 in a. m. Condition about the same on Jan. 26th.

Jan. 26th. Respirations 20 to 24 and shallow; no delirium; no chills; no diarrhea. This condition continued without change until Jan. 27th.

Jan. 27th. 7:30 a. m. Taken with very severe abdominal pain, paroxysmal in type and of a colicky nature; face drawn and expression anxious; lips slightly pallid; abdomen board-like, and general diffuse tenderness, most marked in right iliac fossa; liver dullness not obliterated; perforation diagnosed and at 10:15 patient was taken to the operating room.

Operation. Lateral incision through right rectus; appendix very much inflamed, and removed; stump closed with purse-string suture of silk; appendix was not gangrenous or perforated; ileum examined; two small pin-point perforations found close to cecum, closed with purse-string sutures of silk; two ulcers found near same area, with their bases much inflamed; reinforced with continuous sutures of silk; about 12 inches from colon a large perforation found with well marked borders, and a punched-out appearance, $\frac{1}{8}$ inch in diameter; turned in with purse-string suture of silk; general peritonitis present; abdominal cavity filled with seropurulent fluid; tube and three Penrose drains inserted to bottom of pelvis; upper angle of wound closed with three interrupted sutures of silk-worm gut. Patient stood anesthetic well, and was placed in bed in the Fowler's position. During the afternoon received hypodermoclysis and heart stimulants.

Jan. 28th. Condition fairly good; temperature 99.2°; pulse 98 in a. m.; temperature 101.2°, and pulse 116 in p. m.; profuse serous drainage from wound; abdomen slightly distended; small bowel movement.

Jan. 29th. Condition quite good; temperature 98°; pulse 88 in a. m.; temperature 99.8°, and pulse 100 in p. m.; Penrose drains removed and glass drains inserted; discharge more purulent; some tympanites; some flatus expelled.

From now on improvement continued, but there was some infection of the wound, which promptly cleared up. Did not have much temperature after operation. Diet extended on Feb. 18th; sitting up in bed on Feb. 22nd, and up and about on Feb. 28th. Had a slight relapse on Feb. 28th, not severe, which lasted only eight days. Improvement in all respects followed. Discharged cured on April 12th, 1905. Perforation on 52nd day of disease and 10th day of relapse. Operated upon two hours and forty-five minutes after perforation.

Case 11. Male, aged 43, admitted Feb. 16th, 1905, on the tenth day of disease. Had a light run of typhoid; enlarged spleen; rose-spots present; temperature ranging from 100.8° in a. m. to 101.6° in p. m.; pulse from 80 in the a. m. to 88 in the p. m.; considerable tympanites, but no diarrhea; no delirium, but mental condition dull throughout.

Feb. 21st. Condition this a. m. similar to that of last few days, but at noon was taken with severe abdominal pain; symptoms of collapse; pulse more rapid and weak; patient covered with profuse cold sweat; face pinched; lips pallid; abdomen rigid, and very painful on pressure; partial obliteration of the liver dullness. At 12:30 had a chill; at 3:15 was operated on. Lateral incision through the right rectus; on opening abdomen a large amount of pus was found between coils of intestine; appendix, inflamed and congested, pus removed; two perforations found within 8 inches of colon; closed with purse-string suture of linen; about seven inches above this was found a small pinhole perforation, which had been closed by plastic matter and adhesion of neighboring omentum; all the bowel in this area showed signs of old peritonitis, which must have existed some days, as the surface of the intestine was eroded and roughened. Pus and other effusions wiped out carefully with moist gauze, and peritoneal cavity made apparently clean; one rubber-tube drain was inserted to bottom of pelvis and five Penrose drains in various directions; upper angle of wound closed with through-and-through sutures of silk-worm gut; patient placed in Fowler's position after return to bed. During afternoon condition very critical. 7 p. m. Temperature 101.4°; pulse 130 and weak; stimulants, such as enemata of coffee, whiskey, and normal salt solution; hypodermoclysis; wound dressed in evening; profuse drainage.

Feb. 22d. Condition not as good. 7 a. m. Temperature 98°; pulse 134. 7 p. m. Temperature 98.6°, and pulse 140; some gas expelled following enema of turpentine and asafetida; profuse seropurulent discharge from drains.

Feb. 23d. Condition worse. 7 a. m. Temperature by axilla 102°, and pulse 148. 7 p. m. Temperature by axilla 100°, and pulse 134; is gradually growing weaker; some gas expelled following enema; at 6 p. m. a large amount of blood in stool.

Feb. 24th. Condition very bad. 12:45 a. m. More blood in stool. 2:15 a. m. Extensive hemorrhage from bowels. 7 a. m. Axillary temperature 102°; pulse 148, almost imperceptible. 2:45 p. m. Death.

Perforation on 15th day of disease; death 74 hours and 45 minutes after perforation, and 71 hours and 30 minutes after operation. No autopsy.

TRIALS AND TRIBULATIONS OF THE STATE BOARD OF MEDICAL EXAMINERS

The following clipping from the Caledonia (Minn.) Journal explains itself:

TO WHOM IT MAY CONCERN

As I am temporarily enjoined from the practice of medicine in the state of Minnesota it is proper that at this time I make a public statement of the facts in the case.

I was graduated from the Medical College of University of Iowa, June, 1905, and was licensed by the Iowa State Board of Medical Examiners to practice medicine in Iowa. In looking for practice, I determined to locate in Minnesota, and upon inquiry of the university authorities of Iowa, I was informed that my Iowa license would be recognized in Minnesota.

I came to Caledonia with the intention of remaining permanently. After having been here for some time, I was informed that the State Board of Medical Examiners of Minnesota would not recognize my Iowa license until after June, 1906. It is fair to say that this state of affairs is not because of my lack of professional ability to practice medicine, but merely a technicality of which I was ignorant, but which by ruling of the Medical examiners will be in force only until June.

My stay in Caledonia has been both pleasant and profitable. To the many who have shown me courtesies I wish to extend my hearty thanks and trust that on my return to Caledonia permanently I may renew their acquaintance.

Very respectfully,

DR. MURPHY

The attention of the Minnesota State Board of Examiners is respectfully but earnestly called to this communication.

This young practitioner came into Minnesota from Iowa on the promise of the Iowa State Board that all requirements for admission into Minnesota were fully met and that due recognition would be given the Iowa license and that the Iowa College had agreed to comply in every way with the ruling of the Minnesota Board.

Evidently Dr. Murphy was able to pass the Minnesota examination, but was informed that he would have to wait for the printed report of the Iowa College before the Minnesota Board would believe the Iowa College intended to carry out its agreement.

For the present Dr. Murphy is not permitted to practice in Minnesota, not but that he is quali-

fied according to our legal and medical requirements, but that our Board fear a breach of faith of the Iowa College.

In the meantime quacks, charlatans, mountebanks, and irregulars of all sorts are permitted to carry on their illegitimate business without fear of molestation.

The Board of Examiners are apparently helpless in the matter. They have no latitude, but must follow the law in its strictest sense. It would seem as if some form of compromise might be accepted in the case of Dr. Murphy or any other qualified man. The quack institutions which bluff and laugh at the Board are evading the law by employing a licensed physician, one who has fallen from grace, or who has been discouraged by lack of success in private practice, or who is irregular in his tendencies, and yet is not amenable to arrest, fine, or punishment unless he commits some act whereby his license can be revoked. These quack doctors are exceedingly careful in their methods, and, although they are irregular and unprofessional in many ways, it is difficult to collect or secure evidence against them. Only the best kind of evidence is permissible, and none other will be accepted by the prosecuting attorneys. It can be readily seen how hampered the Board has been in its endeavors,—no way to secure convictions, no paid officer who can spend the time in collecting evidence, and the utter indifference of the profession at large to help rid the state of the charlatans.

The State Board of Examiners should be allowed to exercise some discretion in the admission of duly qualified applicants, but they are bound not to show individual favors. Many of the outside colleges have promised to meet all the requirements of the Minnesota State law, but many broken promises have made our State Board exceedingly cautious, and they are determined that the letter of the law must be carried out even though individuals suffer. It is to be hoped that the work of the present year will show more active exterminations among the illegal institutions.

The new code provides a punishment for failures, and it is very evident the acquisition of evidence will be more easily obtained against offenders than before.

NEW SERUMS

Harper's Weekly of March 3d contains an interesting article by Dr. C. W. Saleeby on the recent researches of Dr. John Beard, of the University of Edinburgh, on the development of cancer cells. Dr. Saleeby calls attention to the frequency of the discovery of the parasite or microbe of cancer, and the numerous "cures" which are so boldly extolled by the lay and medical press. The incidence of cancer has lately been the subject of an exhaustive and critical inquiry in London by the Imperial Cancer Research Fund, and from that and other sources it can be assumed that cancer is not increasing, is not hereditary, and is not infectious, and that the majority of cases of cancer are curable by the knife, if taken in time. This may appear to be an altogether optimistic view of cancer, but when one considers the improvement and wisdom in diagnosis, the opinion is doubtless correct.

Dr. Beard believes that a cancer is the product of what Weisman has taught us to know as a germ cell. It is from these germ cells that cancers arise. These cells are not produced by the embryo, but are independent of it. In certain circumstances they tend to develop into malignant tumors, which, as Beard believes, really represent what is called a parthenogenetic or asexual stage in human generation. In the human individual there is a suppressed stage in which a latent germ cell at some "critical period" may make its appearance and develop into a cancer. The cell is called a trophoblast, and nourishes itself by an acid digestion and degenerates slowly by a pancreatic digestion, and becomes at the same time the embryological, if not the medical, resolution of the problems of malignant neoplasms.

The characteristic ferment of the pancreatic juice is *trypsin*.

Experiments have been made with a famous cancerous tumor known as Jensen's mouse-tumor. Inoculations of mice have shown the characteristic cancer growth, and injections of trypsin have shown that the cancer cells degenerate and shrink in size, and the cells become inactive. The theory is that the trypsin digests the particular living albumin, which is characteristic of the cancer cell and which itself produces the cancer ferment "malignin," by means of which a cancer di-

gests and destroys the tissues of its host.

As yet no conclusive explanation has been offered as to the preparation of trypsin or its method of introduction into the cancer. It is the opinion of physiologists that living cell substances cannot be injected with safety into the human body, yet it is possible that a serum may be manufactured that will contain the necessary anti-toxin for cancer.

Dr. Beard's completed account is to be published, and it is to be hoped that it will clear up many of the perplexing problems which surround the causes and cure of malignant cancers.

EXAMINING BOARDS—A CORRECTION.

In a communication from Dr. Beard, which appeared in our last issue, it was stated that "Massachusetts is as well off as any other state in the Union, and she has always refused to enact a medical law." It is often stated, we believe, in the discussions of this subject, that those states which have no medical practice law get along as well as the states with the most stringent law, in dealing with quacks and irregulars.

Massachusetts has a medical-practice law, and has had one for twelve years; and, moreover, every other state and territory has a law.

The following states grant certificates upon examination, and require no diploma: Massachusetts, West Virginia, Tennessee, Mississippi, Alabama, Arkansas, Texas, and Oregon.

The following require only a diploma: Nevada, Indian Territory, New Mexico, and Colorado.

All other states and territories require both the examination and a diploma.

REPORTS OF SOCIETIES

OLMSTED COUNTY SOCIETY

The regular monthly meeting of the Olmsted County Medical and Surgical Society was held at the Rochester State Hospital on March 9th. The attendance was large and included a number of visiting physicians. The hospital staff had prepared an elaborate clinic, which was presented by Dr. R. M. Phelps and O. C. Heyerdale. A brief outline of the clinic follows:

CLINIC

The plan of this clinic was to exhibit groups

of two to four patients, each group exhibiting one of the different forms of mental diseases according to the classification in use at this hospital.

As preliminary to the presentation of the cases, the classification in use was explained and illustrated by a graphic representation, to be based very largely on the age of the patient. A long line was drawn and divided into equal spaces representing ten years each. Along upon this line, by overlapping oval spaces, it was shown that "idiocy," the first class, commenced largely at or before birth, and by five years of age children were beyond this form. "Imbecility," the second class, overlapped this class or graded into it, and had many cases commencing in very early life, the maximum of cases showing first at six or eight years of age, and then diminishing till only a few cases had their beginning first in the teens.

The third class was made up of "developmental" cases. These similarly overlapped and graded out of imbeciles, being a grade higher. In the older cases this class "graded into," or "overlapped" or "mingled with," the "manias and melancholias." The maximum number of cases in the developmental class originate near the age of 20, but cases occur anywhere from the early teens up to 25 or even 30 years of age.

In the fourth class, "acute manias" and "melancholias," some cases occur down near the age of 20, and the maximum occur between the ages of 30 and 40, and some cases occur as late as 50 or 60 years of age, grading into developmental cases in the younger cases, and into senile cases in the older cases.

Next along the age line comes the fifth class, the "senile dementias," the maximum number of which originate near the age of 60, but occasionally cases begin even before the age of 50.

Of the other seven classes of the twelve included in the classification, the epileptics, under the head "epileptic dementia," would be found, part of them, under the class "imbeciles," as "epileptic imbeciles," and some of them under the class "developmental." The class "paranoia," also, though seemingly peculiar, is, if typical, a sub-head under the "developmental" form.

Under "choreic dementia" is a group of cases beginning usually as adult choreas between the ages of 40 and 50, and producing a progressive dementia of long duration, quite uniformly fatal.

"General paresis" cases, having syphilis as a cause, usually begin along about, or a little after, the age of 40. "Alcoholic dementia" and "syphilitic dementia" have rather more vague connection with the age line, but usually appear in the latter half of life.

In presenting patients in groups, each group to show the characteristics of one of these classes, by their behavior, appearance, and talk, the individuals were selected of varied character, to show links connecting these groups.

The "developmental" class was exhibited as showing the various cases now often collected under the name "dementia precox." It was attempted to show that, while apparently grouped on the basis of age, yet they cling together in that, as a rule, they have slow "invasion," with often a taint of imbecility and with traces of abnormality running back into the teens. The "checking" or sluggishness of development is gross in idiots, very marked in imbeciles, and shows mildly or faintly in the developmental cases.

Under the paranoiac class, two patients were exhibited who were able and willing to talk and present their own cases, and in the course of their speeches to exhibit with fair clearness their delusive trend of thought.

Following the clinic, at 6:30, the Society was entertained at dinner by Dr. Arthur F. Kilbourne, the superintendent. The affair was much enjoyed, and the evening was spent informally. At the short business meeting Dr. C. H. Mayo introduced a resolution endorsing the proposed amendment to the City Charter relating to the inspection of meats and the city abattoir. This resolution was adopted by the Society, and later, at the annual city election, the amendment was carried.

The February meeting of the Society was held at St. Mary's Hospital, and the clinics were given by the staff. Diseases of the upper abdomen were under discussion, and the clinic consisted of stomach and gall-bladder operations by Drs. W. J. and C. H. Mayo, pathological clinics by Drs. Wilson and Maschger, and medical clinics by Drs. Graham and Plummer. Papers on stomach and gall-bladder diseases will be presented at the April meeting.

J. E. Crewe, M. D., Secretary.

HENNEPIN COUNTY

A mid-monthly meeting of the Society was held on March 19, the president, Dr. F. C. Todd, in the chair, and sixty members present.

Dr. E. S. Strout presented a patient with gumma of the sclera of the eyeball.

Dr. J. Clark Stewart gave an address on "Tumors of the Breast, Benign and Malignant," with special reference to their diagnosis and treatment, and presented an operated case. At the next meeting (April 16) Dr. W. A. Jones will give a lantern slide demonstration of the anatomy of the nervous system.

C. H. BRADLEY, M. D., Secretary.

PUBLIC HEALTH LAWS OF MINNESOTA, REVISED 1905,

ISSUED BY

THE STATE BOARD OF HEALTH

§2127. State board of health.—The State Board of Health shall consist of nine (9) members, learned in sanitary science, who shall be appointed by the governor for such periods that the terms of three members will end on the first Monday of January in each year. Vacancies therein shall be filled by like appointment for the unexpired terms, and each member shall serve until his successor qualifies.

§2128. Meetings—Officers—Quorum.—The Board shall hold an annual meeting at the Capitol on the second Tuesday in January, at which it shall elect from its members a president. Regular meetings shall be held at the same place on the second Tuesdays in April, July, and October of each year. Special meetings may be held at such times and places as the secretary or any two members of the Board shall appoint upon three days' notice to the members by mail. The Board shall elect a secretary, to serve during its pleasure, who may or may not be one of its members. A majority shall be a quorum, and any meeting may be adjourned from time to time.

§2129. General duties of officers.—The president shall preside at the meetings, when present, and, in the absence or disability of the secretary, shall perform all the duties imposed upon the latter by law, and be paid therefor; but he may appoint a secretary pro tem. to keep the minutes of a meeting. The secretary shall be the executive officer of the Board, and, in addition to keeping a record of its proceedings, shall see that all lawful rules and orders of the Board, and all duties laid upon it by law, are enforced and performed, and that every law enacted in the interests of public health is obeyed. And he shall be the custodian of the official records and documents of the Board.

§2130. General duties of board—Reports.—The Board shall exercise general supervision over all health officers and boards, take cognizance of the interests of health and life among the people, investigate sanitary conditions, learn the cause and source of diseases and epidemics, observe the effect upon human

health of localities and employments, and gather and diffuse proper information upon all subjects to which its duties relate. It shall gather, collate, and publish medical and vital statistics of general value, and advise all state officials and boards in hygienic and medical matters—especially those involved in the proper location, construction, sewerage, and administration of prisons, hospitals, asylums, and other public institutions. It shall report its doings and discoveries to the Legislature at each regular session thereof, with such information and recommendations as it shall deem useful.

§2131. General and special rules.—The Board may adopt, alter, and enforce reasonable regulations of permanent application throughout the whole or any portion of the state, or for specified periods in parts thereof, for the preservation of the public health. Upon the approval of the Attorney General, and the due publication thereof, such regulations shall have the force of law, except in so far as they may conflict with a statute or with the charter or ordinances of a city of the first class upon the same subject. In and by the same the Board may control, by requiring the taking out of licenses or permits, or by other appropriate means, any of the following matters:

1. The manufacture into articles of commerce, other than food, of diseased, tainted, or decayed animal or vegetable matter;

2. The business of scavenging and the disposal of sewage;

3. The location of mortuaries and cemeteries, and the removal and burial of the dead;

4. The management of lying-in houses and boarding places for infants, and the treatment of infants therein;

5. The pollution of streams and other waters and the distribution of water by private persons for drinking or domestic use;

6. The construction and equipment, in respect to sanitary conditions, of schools, hospitals, almshouses, prisons, and other public institutions, and of lodging houses and other public sleeping places kept for gain;

7. The treatment, in hospitals and elsewhere, of persons suffering from communicable diseases, the disinfection and quarantine of persons and places in case of such diseases, and the reporting of sicknesses and deaths therefrom;

8. The furnishing of vaccine matter; the assembling, during epidemics of smallpox, with other persons not vaccinated. But no rule of the State Board, or of any public board or officer, shall at any time compel the vaccination of a child, or shall exclude, except during epidemics of smallpox and when approved by the local board of education, a child from the public schools for the reason that such child has not been vaccinated. Any person thus required to be vaccinated may select for said purpose any licensed physician, and no rule shall require the vaccination of any child whose physician shall certify that by reason of his physical condition vaccination would be dangerous.

9. The accumulation of filthy and unwholesome matter to the injury of the public health, and the removal thereof and

10. The collection, recording, and reporting of vital statistics by public officers, and the furnishing of information to such officers, by physicians, undertakers, and others, of births, deaths, causes of deaths, and other pertinent facts.

§2132. Publication — Penalties — Three weeks' published notice of such regulations, if of general application throughout the state, shall be given at the seat of government; if of local application only, as near such locality as practicable. Special rules, applicable to particular cases, shall be sufficiently noticed when posted in a conspicuous place upon or near the premises affected. Every person violating any such regulation, or any lawful direction of a board of health or health officer, shall be guilty of a misdemeanor. Fines collected for violations of regulations adopted by the State Board shall be paid into the State Treasury; and of local boards and officers, into the county treasury.

§2133. Interstate carriers—Whenever necessary, the Board may establish and enforce a system of quarantine against the introduction into the state of any plague or other communicable disease by common carriers doing business across its borders. Its members, officers, and agents may board any conveyance used by such carriers, to inspect the same, and, if it be found infected, may detain such conveyance, and isolate and quarantine any or all

persons found thereon, with their luggage, until all danger of communication of disease therefrom is removed.

§2134. Local Boards—Health officers—Every town board shall be a board of health within and for the town, and shall have jurisdiction over every village within its boundaries wherein no organized board of health exists. Every village may, and every city shall, provide by ordinance for the establishment of a board of health therefor. In the absence of such provision in any city, the State Board may appoint three or more persons to act as such until a local board is established or organized, and may fix their compensation, which the city shall pay. Two members of every county board, chosen by it yearly at its annual meeting, and one resident physician elected at the same time, shall constitute the county board of health, with jurisdiction over all unorganized towns therein, and with such other powers and duties with reference to the public health as the State Board shall by its published regulations prescribe. All local health boards of each county shall co-operate so far as practicable, and the State Board, by written order, may require any two or more local boards to act together for the prevention or suppression of epidemic diseases. At least one member of every local board shall be a physician, who shall be the local health officer and executive of the board. If no member of a town board is a physician, it shall appoint a health officer for the town. The compensation of all local health officers shall be prescribed by the body appointing him or to which he belongs, and the same, together with his necessary expenses, shall be paid by the county or municipality in which he serves.

§2135. Duties and penalties—All local boards of health and health officers shall make such investigations and reports, and obey such directions concerning communicable diseases, as the State Board may require or give; and, under the general supervision of the State Board, they shall cause all laws and regulations relating to the public health to be obeyed and enforced. Every member or officer refusing or neglecting to perform any duty imposed upon him by or pursuant to this chapter, or by any statute, ordinance, or by-law relating to the public health, shall be guilty of a misdemeanor.

§2136. Entry for inspection, etc.—For the purpose of performing their official duties, all members, officers, and employees of the state and local boards of health, and all health officers, shall have the right to enter any building,

conveyance, or place where contagion, infection, filth, or other source or cause of preventable disease exists or is reasonably suspected. Every person who wilfully prevents or hinders such entry, or otherwise interferes with the performance of such duties, shall be guilty of a misdemeanor.

§4990. **Obstructing health officer**—Every person who shall wilfully oppose or obstruct a health officer or physician charged with the enforcement of the health laws, in performing any legal duty, shall be guilty of a misdemeanor.

§2137. **Necessary help**—To whom chargeable—Every local board of health shall employ, at the cost of the town, county, or place in which it exists, when necessary, all medical and other help required for the prevention or suppression of epidemic diseases, or for carrying out within its jurisdiction the lawful regulations and directions of the State Board and its officers and employees; and, upon its failure so to do, the State Board may employ such assistance at the local charge. But all persons whose duty it is to care for another infected with a communicable disease, to isolate such patient, or to fumigate or otherwise disinfect any article or place, shall be liable for the reasonable cost thereof to any one performing such duty, or to any county, town, or municipality paying such cost.

§2138. **Allowance and payment of expenses, etc.**—All claims arising under the preceding section against any town, village, or city, if not paid by the persons liable therefor, shall be presented to the town board or council for audit and allowance as in the case of other claims. If any such claim be deemed excessive, or the whole or any part of the services or expenses charged for unnecessary, the items or parts objected to shall not be allowed without the approval of two disinterested physicians, given in the presence of the board or council. Upon the allowance of any such claim, the amount thereof shall be paid, and a certified statement shall be transmitted to the county auditor, embracing a copy of the claim as allowed, the date of such allowance, and showing for what purpose and to whom the allowance was made. The auditor shall lay such statement before the county board at its meeting next following the receipt thereof. One-half the amount so allowed and paid shall be a claim against the county, and if deemed just and reasonable by the board, the same shall be allowed and paid.

§2139. **Appeal from disallowance**—Costs—Within ten days after written notice by the

auditor to the clerk of the town, village, or city of the disallowance of the whole or any part of the half of any such claim chargeable upon the county, the claimant may appeal from such disallowance to the district court by giving notice of appeal as in other cases, and without giving any bond or other security thereon. Such appeal shall be noticed, tried, and determined as in other appeals from the disallowance of claims by the county board. Unless the appellant shall recover more than the amount allowed by the county board, it shall be liable for costs and disbursements; otherwise the county shall be liable.

§2140. **Vital statistics**—The State Board shall prepare and annually furnish, to the proper local officers, blank forms for all purposes connected with the return of births, deaths, and other vital statistics which it is authorized by law to collect. All clerks, recorders, and health officers to whom such blanks are so furnished shall obey its directions concerning the use, filing, and return thereof, and every failure so to do shall be a misdemeanor. If any such officer shall refuse or fail to obtain and furnish the information so required, the State Board may obtain the same by other proper means, and the reasonable cost thereof shall be paid by the county.

§2141. **Fees**—For obtaining and returning the information so required concerning each birth and death, the clerk or other officer so doing shall receive twenty-five (25) cents from the county upon presentation of a voucher for the amount due. On or before January 15th of each year, the secretary of the Board shall transmit to the clerk of the district court of each county all the returns received by him during the preceding year from the clerks and health officers of such county, with his certificate showing the whole number of births and deaths reported during such year by each clerk or health officer. Said clerk shall thereupon file the same in his office and shall issue to such town clerk or health officer a voucher showing the amount due him for the aforesaid services, as shown by the certificate of said secretary. For the above named services, said clerk shall receive from the county ten (10) cents for each birth and death recorded. Provided, however, that in cities of over 100,000 inhabitants, such health officer shall perform all such duties without any charge therefor, and in counties having a city of over 100,000 inhabitants, such district court clerk shall not issue any such voucher to the health officer of such a city, nor shall said clerk receive any compensation for any of the duties herein required in connection with births or deaths within such a city.

§2142. **Parents and others to report**—Parents shall give such notice and information as the rules of the Board may require of the birth or death of their children. All householders, all keepers of hotels, hospitals, and infirmaries, and all heads of charitable, penal, or reformatory institutions, shall give like information of births and deaths occurring in their respective places. And every physician and every midwife shall report the births or deaths of persons under their care within ten days thereafter. Every person failing to comply with any provision of this section shall be guilty of a misdemeanor.

§2143. **Offensive trades**—No person, without the written permission of the board of health of the town, village, or city, shall engage therein in any trade or employment which is hurtful to the inhabitants, or dangerous to the public health, or injurious to neighboring property, or from which noisome odors arise. Any person so doing shall forfeit fifty (50) dollars for each day on which such trade or employment is exercised, to be recovered by the local board of health by suit in its name and for its benefit.

§2144. **Assignment of places, etc.**—Such local boards, from time to time, may designate places within their respective jurisdictions wherein such trades or employments may be carried on, by orders filed with the town, village, or city clerk, and may revoke the same by like orders. Within twenty-four (24) hours after written notice of any such revocation, every person exercising such trade or employment in the locality to which it relates shall cease to do so, or forfeit \$100 for each day thereafter on which the same is continued, to be recovered as provided in the preceding section.

§2145. **Appeal to district court**—Within five days after service of such notice, any party aggrieved by an order made under the preceding two sections may appeal therefrom to the district court of the county, by giving notice of appeal as in other cases, together with a bond of not less than \$500, to be approved by the judge of said court, conditioned for the prosecution of such appeal to judgment and for payment of all costs and expenses that may be awarded against such appellant. If such appeal be taken within twenty (20) days before the time for holding any general term of said court within said county, it shall be heard at such time, and, at either party's request, may be tried by a jury; if taken more than twenty (20) days before any such term, the judge shall appoint a time and place for hearing the same,

and, if demanded, direct the sheriff of said county to summon a jury of twelve persons to serve in said cause, any of whom may be challenged as in civil cases, and talesmen may be called and said appeal tried as in other civil cases. During the pendency of such appeal such trade or employment shall not be exercised contrary to the order of said Board, and upon violation of any such order, the appeal shall forthwith be dismissed. Upon the return of the verdict the court may either alter or amend the order of the Board or confirm or amend it in full, to conform to such verdict. If the matter be tried by the court, it shall have and exercise the same power.

§2146. **State board — Powers—Appeal**—Upon written complaint made to the State Board that any person is occupying or using any building or premises within any town, village, or city, for the exercise of any such trade or employment, it shall appoint a time and place for hearing and give notice of not less than ten days to the complainant and the person complained of, and after such hearing, if, in its judgment, the public health or comfort and convenience require, it may order such person to cease from further carrying on such trade or employment in such building or premises; and after written notice of such order, any person thereafter exercising such trade or employment in said building or premises, shall forfeit \$100 for each day after the first, to be recovered as provided in the preceding sections. Any person aggrieved by such order may appeal, and said appeal shall be taken and determined, in the same manner as prescribed in Section 2145. During its pendency such trade or employment shall not be exercised contrary to the orders of the State Board, and upon the violation of any such order the appeal shall forthwith be dismissed.

§4994. **Sale of unwholesome poultry, etc.**—Every person who shall offer or expose for sale at retail, for human food, at any public market, store, shop, or house, or in or about any street or other public place, any domestic or wild fowls, or any slaughtered rabbits, squirrels, or other small animals, wild or tame, unless the entrails, crops, and other offensive parts are properly drawn and removed, shall be guilty of a misdemeanor.

§4995. **Protection of meat, etc.**—Every dealer in slaughtered fresh meats, fish, fowl, or game for human food, at wholesale or retail, at any established place or as a peddler, in the transportation of such food from place to place to customers, shall protect the same from dust, flies, and other vermin or substance

which may injuriously affect it, by securely covering it while being so transported. Every violation of the foregoing provision shall be a misdemeanor, punishable by a fine of not less than ten dollars or by imprisonment in the county jail for not less than ten days.

§1819. Bakeries and confectionery establishments—Every bakery and confectionery establishment shall be of good workmanship, well drained, and constructed and plumbed according to established sanitary principles. Every room used for the manufacture, storage, or sale of bread or other food products, shall be light, dry, and airy. The floors and walls of every room used for the manufacture of such food products shall be so constructed as to exclude rats and other vermin, be at all times free from moisture, and kept in good repair. Its floor shall have a smooth surface, constructed of wood, cement, or tile laid in cement, save that, when it is more than four feet below the level of the street or adjacent ground, it shall never be constructed of wood. Its walls and ceilings shall be white-washed at least once in three months, and the floors, utensils, and furniture of such room, and of every room used for the storage or sale of such food products, shall be so arranged as to be easily kept clean, and, together with the wagons used for its delivery, shall be kept in a clean and sanitary condition. No water-closet, earth-closet, privy, ash pit, or sleeping room for workmen shall be in, or communicate directly with, any bake room or with the kitchen of any hotel or public restaurant.

§1818. Cleanliness in factories, etc.—Every factory, mill, and workshop shall be kept clean and free from effluvia arising from any sewer, drain, or privy; be properly ventilated; and provided with privies for the separate use of male and female employees, properly screened, and at all times kept in a sanitary condition. Whenever the labor performed is such as to require a change of clothing, separate dressing rooms shall be provided for the sexes.

§4935. Endangering life, health, or morals of minors—Every person having the care or custody of a minor who—

1. Shall wilfully cause or permit his life to be endangered, his health to be injured, or his morals to become depraved; or who

2. Shall wilfully cause or permit such minor to be placed in a situation, or to engage in an occupation, which will be likely to endanger his life, injure his health, or impair his morals—

Shall be guilty of a gross misdemeanor.

§2147. Pollution of water—No sewage or other matter that will impair the healthfulness of water shall be deposited where it will fall or drain into any pond or stream used as a source of water supply for domestic use. The State Board of Health shall have general charge of all springs, wells, ponds, and streams so used, and shall take all necessary and proper steps to preserve the same from such pollution as may endanger the public health. In case of violation of any of the provisions of this section, the State Board may, with or without a hearing, order any person to desist from causing such pollution, and to comply with such direction of the Board as it may deem proper and expedient in the premises. Such order shall be served forthwith upon the person found to have violated such provisions.

§2148. Appeal to district court—Within five (5) days after service of such order, any person aggrieved thereby may appeal to the district court of the county on which such polluted source of water supply is situated; and such appeal shall be taken, prosecuted and determined in the same manner provided in Section 2145. During the pendency of such appeal, the pollution against which the order has been issued shall not be continued, and upon violation of such order the appeal shall forthwith be dismissed.

§2149. Other remedies preserved—Nothing in Sections 2143-2148 shall curtail the power of the courts to administer the usual legal and equitable remedies in cases of nuisances or of improper interference with private rights.

§4446. Nuisance defined—Action—Anything which is injurious to health, or indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, is a nuisance. An action may be brought by any person whose property is injuriously affected or whose personal enjoyment is lessened by the nuisance, and by the judgment the nuisance may be enjoined or abated, as well as damages recovered.

§4987. Public nuisance defined—A public nuisance is a crime against the order and economy of the state, and consists in unlawfully doing an act or omitting to perform a duty, which act or omission—

1. Shall annoy, injure, or endanger the safety, health, comfort, or repose of any considerable number of persons;

2. Shall offend public decency;

3. Shall unlawfully interfere with, obstruct, or tend to obstruct or render dangerous for

passage, a lake, navigable river, bay, stream, canal, or basin, or a public park, square, street, alley, or highway; or

4. Shall in any way render a considerable number of persons insecure in life or the use of property.

(See §4416. Nuisance defined—Action.)

§4988. Maintaining or permitting building as a nuisance—Every person who shall permit or maintain a public nuisance, for which no special punishment is prescribed; or who shall wilfully omit or refuse to perform any legal duty relating to the removal of such nuisance, and every person who shall let, or permit to be used, any building or portion thereof, knowing that it is intended to be used for committing or maintaining any such nuisance—shall be guilty of a misdemeanor.

§5007. Deposit of unwholesome substances—Every person who shall deposit, leave, or keep, on or near a highway or route of public travel, on land or water, any noisome or unwholesome substance; or who shall establish, maintain, or carry on, upon or near a highway or route of public travel, on land or water, any business, trade, or manufacture which is noisome or detrimental to the public health; or who shall deposit or cast into any lake, creek, or river wholly or partly in the state, or who shall deposit upon the ice of any such lake, creek, or river, the offal from, or the dead body of, any animal—shall be guilty of a gross misdemeanor, and punished by a fine of not less than one hundred dollars, or imprisonment in the county jail for not less than three months nor more than six months.

§5008. Exposing person with contagious disease—Every person who shall wilfully expose himself or another affected with any contagious or infectious disease, in any public place or thoroughfare, except upon his necessary removal in a manner not dangerous to the public health, shall be guilty of a misdemeanor.

§5442. Contagious disease—Removal of convicts—In case of an epidemic of any infectious or contagious disease in said prison, whereby the health or lives of the prisoners may be endangered, the warden, with the approval of the Board of Control, may cause the prisoners so affected to be removed to some other secure and suitable place or places for care and treatment; and, should said prison be destroyed, in whole or in part, by fire or other casualty, so as to become unsuitable for proper detention and custody of the convicts, the warden, with the approval of said Board, may re-

move them, or any number thereof, to such other safe and appropriate place as may be provided.

§5491. Health officer to inspect—The health officer of every city and village having a lock-up shall inspect the same once a year, with reference to its sanitary condition, make a written report thereof to said Board of Control upon blanks prescribed by it, and deliver a copy of such report to the governing body of such city or village. Upon filing such report he shall receive from the treasurer of such municipality a fee of two dollars.

§5492. Board of control may condemn—Whenever said Board of Control shall become satisfied, from the report of a local health officer or from its own inspection, that any such lockup is unfit for use, it may condemn the same by its written order, and it shall not be further used while such order is in force.

Chap. 101. Laws of 1905—To Regulate Embalmers

§1. No person shall embalm any dead human body in the state of Minnesota without being licensed by the State Board of Health as hereinafter provided.

§2. The State Board of Health of the State of Minnesota is hereby authorized and empowered to examine all applicants for license to practice embalming, and to determine whether or not such applicants possess the necessary qualifications to properly embalm dead human bodies; and, if on such examination, said Board shall determine that such applicant is properly qualified to embalm dead human bodies, it shall grant a license to such person to embalm dead human bodies for a period ending the 31st day of July following.

§3. An applicant for license shall at the time of application pay a fee of five (5) dollars. No person shall be granted any such license unless he shall, in addition to other qualifications, be at least twenty-one (21) years of age, of good moral character, and shall have for at least one year had practical experience in embalming.

§4. Any person now holding a license from the State Board of Health as an embalmer shall be held to be licensed as an embalmer under the terms of this act, but all such licenses shall expire July 31st next. Any license may be renewed from time to time and shall be in force after such renewal for a period of two (2) years from the 31st day of the preceding July upon the payment of a renewal fee of one (1) dollar.

§5. The State Board of Health may revoke any license granted or may refuse to grant or renew a license upon proof of the violation by the holder of such license, or the applicant for such license or renewal, of the rules of the State Board of Health concerning the care, custody or disposition of dead human bodies, or the disinfecting of premises where contagion exists, or for want of moral character or of capacity.

§6. Any person who shall embalm a dead human body, or who shall hold himself out as an embalmer thereof without being licensed as herein provided, shall be guilty of a misdemeanor, and upon conviction shall be liable to a fine of not less than twenty-five (25) dollars or more than a hundred (100) dollars, or imprisonment for a period of not to exceed three (3) months.

§7. This act shall be in force from and after January 1st, 1906.

Approved March 31st, 1905.

§2937. **Cemetery actuary—Duties**—Every such corporation (cemetery association) in addition to its ordinary corporate officers, shall annually appoint an actuary, or provide by its by-laws that its secretary shall perform the duties of such office. The actuary shall keep a register of burials, in which he shall enter the date of burial or cremation, and the name, age, sex, nativity, and cause of death, of every person interred or cremated in such cemetery, so far as such facts can be ascertained from the friends, attending physician, or undertaker in charge, and, in case of a pauper, stranger, or criminal, from the public official directing the burial. Such record shall be open to public inspection, and he shall furnish to the State Board of Health and to local health officers, when so requested, an accurate summary of such record during any specified year.

§4991. **Wilful violation of health laws**—Every person who shall wilfully violate any provision of the health laws, the punishment for which is not specifically provided for therein, shall be punished by imprisonment in the county jail for not more than one year, or by a fine of not more than two thousand (2,000) dollars, or by both.

NEWS ITEMS

Dr. O. F. Melby has moved from New Richmond to Argyle.

Dr. J. F. Roselle has permanently located at Alexandria, S. D.

Plans are being drawn for a new hospital building for Moorhead.

Dr. A. G. Schulze, State University, '04, is located at Carleton.

Dr. J. G. McNamara has moved from Farmington to South St. Paul.

Dr. J. F. Adams, whose home is Groton, S. D., will locate in Pocatello, Idaho.

Dr. McLaren, of Souris, N. D., is taking a post-graduate course in Chicago.

Dr. C. F. Coulter, of Wadena, is doing eye and ear work in New York City.

Dr. J. H. Stack has given up practice at West Duluth, and will locate in La Crosse, Wis.

Dr. F. R. Mosse, of Rochester, is able to resume practice after weeks of severe illness.

The citizens of Preslo, S. D., have been asked to contribute to a fund to build a hospital in that place.

Dr. Hugh Nelson, a resident of Minneapolis for over 20 years, died last month at the age of 63.

Dr. R. W. Webb, of Larimore, N. D., has returned home after having taken a post graduate course.

Dr. L. B. Remick, who formerly practiced at Lidgerwood, N. D., has located at Triumph, in this state.

Dr. C. E. Johnson will move from Appleton, in this state, to Winnipeg, Manitoba, the middle of this month.

Rugby, N. D., is having plans drawn for a \$25,000 hospital building to be in charge of the Lutheran church.

Dr. F. W. Maercklein, of Ashley, N. D., has returned from Chicago, where he has been taking a post-graduate course.

Dr. D. F. Dumas, who went from Albert Lea, Minn., to Belgrade, S. D., last summer, has given up practice at Belgrade.

Dr. J. A. Sanford, State University, '01, has sold his practice at New Market to Dr. H. J. Grevelli, of Young America.

The physicians and citizens of the East Side (Minneapolis) are raising money to establish a hospital in that part of the city.

Grand Forks, N. D., is still talking about a general hospital that shall be worthy the city. The Commercial Club has the matter in hand.

Dr. L. A. Moore, Rush, 1900, who has been practicing at Galva, Ill., is now located at Tower, and is a member of the St. Louis County Society.

Dr. J. C. Kinsolring, of West Virginia, has become an associate of Dr. H. J. Rock, of Aberdeen, S. D. He will do the medical work of the firm, and Dr. Rock the surgical work.

Dr. E. Klaveness, of Brookings, S. D., has sold his practice to Dr. S. Carlson, who is a graduate of the University of Christiania, Norway. Dr. Klaveness will probably locate in Sioux Falls.

Dr. Ralph James has accepted a position in the Rood Hospital, of Hibbing, and has not gone to the mythical city of *Appington*, as stated in our last issue upon the authority of a country exchange.

Dr. J. D. Murphy, of Iowa City, Iowa, has been appointed interne at St. John's Hospital, of Fargo, N. D., to succeed Dr. W. A. Bessessen, who will become an interne in St. Mary's, of Rochester, Minn.

The osteopaths of Montana asked the attorney general of the state if they would be permitted to administer an anesthetic for the purpose of performing an operation. The attorney general replied that they would not be.

Dr. Cornelius Williams, of St. Paul, has won another verdict in the case pending against him, which has been tried three times and has been once to the supreme court. This time the judge sets aside a verdict found by the jury.

St. Louis County Medical Society is prospering, and now has nearly 100 members. The society will soon be entitled to two delegates. Dr. J. Clark Stewart, of Minneapolis, gave an illustrated lecture on "Tumors of the Breast" at the March meeting.

Dr. A. A. Naegeli, of Winthrop, died last month at the age of 64. Dr. Naegeli was born in Switzerland, and studied medicine in Bern. He came to America in 1867, and took a course at the Medical College of Indiana, from which he graduated. He practiced in Minneapolis at one time.

Dr. D. W. Robinson, of Pierre, S. D., has an article in the March Review of Reviews, of New York, on the subject of tuberculosis among the

Sioux Indians, who are threatened with extermination from the disease. Poorly prepared food and bad air are accountable for a mortality in this disease much in excess of 50 per cent.

On March 10th the members of the Wabasha County Medical Society tendered Dr. John C. Adams, of Lake City, a banquet to celebrate his seventy-fifth birthday. Dr. Adams has practiced in Lake City over a third of a century, and he holds in the hearts of the people of that community the position so often told in the prose and poetry of yesterday—a position probably never to be attained by the man who starts in the practice of medicine today. To have gained and held such a position is success, in the fullest and best sense of that much-abused word. Dr. Charles N. Hewitt, Dr. W. T. Adams, Dr. E. H. Bayley, Dr. J. B. McGaughey and Dr. W. F. Wilson, who acted as toast-master, made remarks. Dr. Adams spoke feelingly of the high compliment paid him.

FOR SALE

Because of poor health I offer for sale my property and practice in Western Minnesota in a village of 400, in prosperous farming community, mostly Scandinavian. Practice pays \$5,000 a year, and goes to purchaser of my house (good house and stables, 7 acres of land, horses, cows, etc.). Price, \$4,000. For particulars address C, care of this paper.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during the fine season in the delightful city, write for particulars, to New Orleans Poly-clinic, P. O. Box 797.

ICE-BAGS AND WHEN TO USE THEM

The value of ice bags, especially in acute inflammations due to bacterial invasion, is emphasized by P. H. Aurness, Minneapolis, Minn. (Journal A. M. A., March 24). To be efficient there should be constant drainage from the bag in order to keep the temperature that of melting ice, and he describes a drainage ice bag of his own invention specially devised for pneumonia cases. Among the diseases in which "ice bags are of great importance as an auxilliary remedy the following may be mentioned: Acute meningitis, acute mastoid disease, acute tonsillitis, lobar pneumonia (with marked success), acute pleurisy, acute endocarditis and myocarditis, acute hepatitis, acute gastritis, acute rheumatic arthritis and acute synovitis, acute enterocolitis, acute peritonitis and acute pelvic diseases, acute cystitis, acute appendicitis (of great benefit), hemoptysis, hematuria, typhoid fever (to head and abdomen), scarlet fever (to head), erysipelas (to region involved), neuralgia and headache."

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SURGICAL TREATMENT OF GOITRE*

BASED UPON 200 OPERATIONS

By C. H. Mayo, A. M., M. D.

ROCHESTER, MINNESOTA

As a field for specialism in surgery the neck offers as many inducements to those who would limit their territory as any other of the localities to be chosen. Among the numerous diseases of this region none present more varied or interesting phases than those of the thyroid gland. It is subject to anomalies of development, hypertrophies, tumor growths, and inflammations, as well as to changes in both the quantity and character of its secretion.

Formed, as it is, from median and lateral inversions of the pharyngeal hypoblast, it becomes subject to the same failures of development as occur from defects in closure of branchial clefts: portions of the gland fail to unite; and lost or accessory particles or portions of gland are found detached in developmental areas.

The superior point of inversion is at the foramen cecum in the tongue. This portion forms the upper poles and also the upper portion of the isthmus. In less than one-half of people it leaves a tongue of gland above the isthmus, which is called the pyramidal lobe. In this area accessory thyroid growths are not uncommon from detached or fetal particles undergoing excess of development from loss of normal nerve control. Such growths may also occur in the tongue. The greater portion of each lobe is formed from lateral inversions from the pharynx, one or both of which may be missing or may not unite with the isthmus, as occurs in most of the vertebrates. Accessory lobes are also found in these regions.

The gland somewhat resembles a horseshoe,

having two lobes, one on either side of the trachea connected across its upper rings by the isthmus. They are about two inches long, and



Cystic Goitre, measuring 31 inches in circumference, including the neck.

are smaller at the upper portion. Its weight is from one to one and one-half ounces. A thin fibrous capsule invests the entire gland, a portion of it passing separately behind both the esophagus and trachea to connect with the opposite

*Read before Missouri Valley Medical Society, March 22, 1906.

side. To this structure is due many of the symptoms of pressure which occur in tumors enclosed by a dense capsule, the growth within which interferes with swallowing, breathing, or speaking. Firm fibrous bands also unite the gland to the trachea and cartilages, which causes it to move with these structures. Trabeculæ of connective tissue pass into the gland, and break up into minute subdivisions, which enclose the acini and constitute the supporting structure of the organ, as well as forming a space for the lymph channels, which, in all probability, act as the ducts for a portion of its secretion.

The blood supply of the thyroid is remarkably extensive for an organ of its size. The vessel anastomosis is very free. The external carotids, through the superior thyroid arteries, supply the upper poles; while the inferior thyroids from the thyroid axis on each side supply more directly the larger part of the gland. The main veins are the superior, the middle, and the inferior, although many others seem to develop in diseased organs. The nerve supply is from the sympathetic. In intimate relation with the right inferior thyroid artery is the recurrent laryngeal nerve, which lies in the space between the trachea and the esophagus, and is often so affected by pressure of tumors, by operation, or scar tissue as to cause hoarseness. On the left side the recurrent is usually more deeply set and not in such close relation to the artery, as was pointed out by Sifton.

Associated in function, but less understood, are the parathyroids—four small glands, two on either side of the neck behind or within the investing gland capsule. These glands are seldom seen in the surgical work upon the thyroid or adjacent structures unless they are themselves enlarged by disease. It is claimed by Humphrey that a fatty degeneration of these bodies exists in Graves' disease.

In the review of foreign literature by Willard Bartlett it is stated that Pineles noted that tetany could not be produced by complete removal of the thyroid glands as long as the parathyroids were left behind, but if the parathyroids were removed tetany was caused without cachexia. The experiments were made upon cats and dogs. Pineles explains occurrence of tetany in the human by the fact that in operations removing both lower poles the small glands are often removed even if the upper segments are left. Kocher reports 70 per cent of cachexias in 34 cases of total excision. Garre reports 50 per cent in 67 cases. Billroth had 52 cases develop tetany with 9 deaths, and 11 developed cachexia. The London myxedema committee made a more favorable report, finding only 24 per cent in 224 cases of total excision. It is probable that only the more marked cases are reported, as it is common that partial cases are overlooked when

brought about by disease of the gland, and the activity of accessory thyroids is always an unknown possibility.

The loss or lack of function of the thyroid gland in the very young prevents mental and physical development. Its loss in the young adult induces mental deterioration, while in the adult the frequency with which myxedema follows total removal, and the known effects of over secretion—all favor the wholesome respect which physiologists and surgeons hold for this organ. In Graves' disease the older impressions are still in circulation. Many insist that exophthalmos must be present; others that a goitre is essential; and some, to call the disease such, want all the symptoms, tachycardia, exophthalmos and special eye conditions, goitre, muscular tremor, general nervousness, intestinal disorders, loss of weight, etc. Then the case is treated as a case of exophthalmic goitre. Should a surgeon operate, removing the larger half and isthmus of the gland, and the pathological report is colloid with hypertrophic areas, then others say it was a case of pseudo-Graves' disease, their experience being derived from medical treatment of such cases, but without removal of gland tissue for examination. This type of case is not rare, and often presents the most exaggerated symptoms of Basedow. The fact is that, like degrees of myxedema from loss of function, we have degrees of Basedow's from excess, and while the essential feature of the pathology of these cases is hypertrophy, it may be, and often is, general throughout the gland. It also may be only in a few or many local areas mixed with other types of changes in structure.

The goitres usually found in young people from 12 to 25 are the so-called simple goitres, a parenchymatous enlargement with excess of colloid; and they usually recover with or without treatment, rarely requiring operation. Teratoma and echinococcus are uncommon, but must be considered. Irregular enlargements may be adenomata, cysts, or unevenly developed colloid goitre.

Malignant disease in the thyroid also occurs in irregular enlargements, and is often accompanied by voice changes. Bloodgood states that when a differential diagnosis is possible the case is probably too advanced to cure by operation. Sarcomas may be more uniform in growth and cystic. Most of the bulging tumors, evenly rounded, covering the front of the neck, and moving with the trachea, are cystic or colloid cystic, with a heavy capsule, in which may be a thinned-out layer of the remains of the gland. The removal by enucleation of such masses, saving the capsule, merely eliminates what the system has already accustomed itself to do without, and usually creates no more disturbance of the economy of the body than the removal of a blind eye, functionless kidney, or cystic gall-bladder.

Many operations made upon enlarged thyroids are necessary to relieve pressure and associated symptoms. Others are purely a question of expediency to relieve an unsightly tumor, which is the source, merely, of more or less discomfort.

Operating upon exophthalmic goitre is often a life-saving procedure. The surgeon cannot always secure consent to operate before delay renders the patient's condition so nearly moribund that the shock of operation induces a mortality prohibitively high.

We will not consider the semisurgical treatment of goitre,—injection, puncture, and drainage methods,—for they are nearly as dangerous as radical operative methods, and must be reserved for special indication. The same may be said of Jaboulay's method of exothyropexy.

In Graves' disease the operations upon the sympathetic ganglions advocated by Abadie and Edwards and developed by Jonesco and Jaboulay, are not as satisfactory in permanency of results as well directed operations upon the gland itself. Rehn's report makes it less than half as favorable. Serum treatment has not been sufficiently worked out for us to experiment with the numerous samples on the market.

In cases of very severe types of Graves' disease it may be necessary at times to prepare patients for some time and keep them under observation to better estimate their ability to withstand operation. The condition of the heart seems to be the most important in these cases. As a rule an effort should be made to reduce the pulse to 120. At times cases can be operated with safety who have a pulse of 140 or greater, but the risk increases if the pulse fluctuates greatly in tension and rapidly from slight exertion or nervousness. Such cases should be prepared for operation for possibly a number of weeks before it can be attempted with safety. For the purpose of improving the condition we give extract of belladonna in one-sixth grain doses, three to four times a day, for its general effect and to inhibit glandular activity. If there is not considerable improvement within six weeks, x-ray exposures are added to the degree of local tolerance. The rays have almost a selective action upon glandular tissue, and often seem to exert a favorable effect in these cases.

After operation the improvement in cases of Basedow's disease is most remarkable and early. Within two or three days, as a rule, there is a reduction of the tachycardia and the nervousness is under control. Often the prominent eyes are greatly improved in a few days, but in the worst cases this symptom is slow to completely disappear. If there is not a large tumor we content ourselves with the removal of one-half of the gland with the isthmus. This is also done if the

tumor is larger, but in such cases where the remaining half increases and the symptoms relapse a further operation to remove the lower half of the remaining lobe is indicated. In cases of very severe Basedow's, with medium or large goitre, it is best to remove one lobe (usually the right), the isthmus, and the lower half of the left, leaving the lateral vein and the upper pole with its vessels. We should plan to leave about as much as would constitute a normal thyroid in quantity, that is, from one to one and one-half ounces of gland.

Of all the goitres the simplest and safest type of case for operation is where the tumor is rounded and more or less even in contour. If it is firm it is so much the better, as it has a strong capsule. These tumors are of a cystic nature and occur in one or both sides or the center, or, at times, they seem from external examination to have taken the place of the entire gland. After exposure the outer capsule is incised, and the operator at once comes upon either the cyst wall or gland tissue; if the latter, penetration into it will quickly expose the sac of the cyst and enucleation can be made. In large simple cysts it often occurs that only a small amount of thyroid is left in the capsule, which is saved by this method of operating. The cases with irregular growths can be treated by extirpation of one side (the larger) and enucleation of cystic masses in the remaining portion. The dangers from operation in these cases are as a rule, not great unless the condition is an exceptional one complicated by absorption of tracheal rings and collapse of its lumen, retrosternal growths, enormous size of tumor, venous distension, or other condition from which the patient suffers in addition to the goitre.

The past 50 years have seen the mortality following these surgical operations reduced from 40 per cent to 1 or 2, Kocher's later percentage in uncomplicated cases being 0.2 per cent.

The causes of death are anesthetic, shock, hemorrhage, air embolism, pneumonia, suffocation, acute thyroidism, and infection. It is not common to have injury of the recurrent laryngeal nerve, although it is difficult to prevent it in certain cases in which the posterior capsule does not readily separate from the gland. In goitres in which there is a general enlargement it is a rule that the remaining half shrinks after the removal of one-half and the isthmus. Bergéat reports only 2 per cent of recurrence in several hundred cases investigated.

If there is one thing connected with surgery which is unstable it is the matter of anesthetics. There is hardly a journal which does not give every few weeks some new method of producing anesthesia. Men without great experience with any anesthetic often take it upon themselves to recommend changes. It is probable that the

great variety of methods is developed because of the idiosyncrasies of the operator rather than the necessities of the patient. In some 13 cases we have used cocaine infiltration. In 3 of these the operation was completed under chloroform. In the last 150 cases we have operated under ether preceded 20 minutes by a hypodermic of 1-6 grain of morphia and 1-120 of atropine. We have had no deaths which we could attribute to the anesthetic.

OPERATION

We prefer the transverse collar incision. This is made across the neck from the inner border of one external jugular to the other, even though the tumor be unilateral. The incision includes the skin and platysma myoides, and is convex on its lower border to accurately follow the skin lines of the neck, and it is usually over the center of the tumor. The wound is enlarged by dissection of these flaps from above and below to the thyroid, cartilage, and sternum narrowing in width of dissection, top and bottom, to the sternohyoid muscles and the sternum. The sternohyoid muscles, usually free below, are separated above by a vertical incision. The group of muscles on either side comprising the sternohyoid, sternothyroid, and omohyoid are now separated from the loose cellular capsule of the thyroid gland, and forcibly retracted. In this way sufficient space is secured for the removal of moderate-sized tumors.

In case more room is required for large goitres and for certain types of goitre, such as in Basedow's, it is secured by incising one set, and very rarely both sets, of the muscles covering the tumor. This muscle division is usually wrongly made over the bulging part of the gland in the line of skin incision. It should be made as high as the thyroid cartilage. Lateral retraction folds the muscles over the inner border of the sternomastoid. Partial section may be sufficient to furnish ample space. The most important part of this high section of muscles is that it preserves the nerve supply to these structures. The thyrohyoid muscle is supplied by a branch from the hypoglossal, and the others by the loop of communication between the descendens and communicans hypoglossal. It also exposes the key to the situation, the superior thyroid artery.

In very large tumors it may be necessary to secure still more room. This is secured by splitting the lower flap of the skin in the center to the sternal notch. This actually exposes the whole field of operation. Such a dissection exposes all of the area of the thyroid gland, and should be employed especially by operators unaccustomed to this work. After the extirpation of the tumor, the muscles are united by suture, but as this is one and one-half

to two and one-half inches above the line of skin-closure the scar is broken and the skin does not become attached to and move with the upper muscle stump, as is so commonly seen. If it is desired to remove one-half the thyroid, the superior thyroid artery is first ligated at the upper horn, which is then elevated and the posterior capsule opened and brushed with gauze to the midline. As the tumor is lifted the one or two lateral veins are double-clamped and ligated. The capsule is still further wiped inward and the lower lobe lifted, the inferior thyroid being clamped on a level with or above the capsule. The isthmus is separated, clamped, and cut. Leaving the posterior capsule tends to prevent the removal of the parathyroids. Several dozen clamps are necessary at times, especially in exophthalmic patients, as the smaller vessels in these cases, from the thyroidism present, bleed like leech bites.

In the hard, rounded tumors the outer capsule should be penetrated to the shining capsule of the tumor within, which can often be enucleated. These are very safe cases for operative recovery. In the worst types of exophthalmic cases, after removing one-half, which is usually the right and the isthmus, the lower pole of the left side is elevated and the inferior thyroid ligated. An incision is then carried obliquely across this half of the gland from the isthmus to a point below the lateral vein. The lower part is removed. Mattress sutures are used to stop bleeding. The removal of this part of the gland will cause more hemorrhage than the removal of the other lobe and isthmus, but it will be found to be worth while in the immediate, as well as the later results. To block lymphatic absorption the wound is washed with Harrington's solution (No. 9) before closing, in cases that are to be drained; that is, in cases in which the traumatic area will induce considerable wound secretion and in the exophthalmics because of the toxic nature of the secretion.

The use of large saline enemata slowly given by rectum, seems to delay absorption in the exophthalmic cases, and restores fluid to the circulation in all cases in which the operation is attended by considerable loss of blood.

These operations for goitre secure most surprisingly early results, the very worst cases often being able to leave the hospital in six days.

MORTALITY

In a total of over 200 operations we have had but one death, if we exclude exophthalmic goitres and malignancy. This fatality was from pneumonia on the eighth day. The operations have been made by W. J. Mayo and myself.

WHEN NOT TO OPERATE FOR APPENDICITIS*

By JAMES E. MOORE, M. D.

MINNEAPOLIS

The profession has spent a number of years discussing when to operate in appendicitis and has arrived at a definite conclusion concerning most cases, but there still remains a class of cases in which there is a decided difference of opinion. In the past few years the extremists have been losing ground. It is some years now since I have met a medical man who claimed that medical treatment is the best for appendicitis and that operations should not be performed. On the other hand, I am not now personally familiar with the work of any surgeon who says that every case of appendicitis should be operated upon, no matter when the diagnosis is made, although several of my colleagues held that opinion a few years ago, and I was inclined to believe then that operation at all times and under all conditions should be the rule. At that time we had just learned that by operating upon acute appendicitis early we could save nearly every case. We then theorized that when an operation was so good in one class it must be in all classes. I now believe that our theory was based upon false premises, because experience, which is always better than theory, has taught me that there are conditions under which we should not operate for appendicitis. Our extreme practices have resulted in good to our fellow man, although they were pretty hard on him for a time, because we have learned that, in appendicitis as in most things, there is a happy medium and that there are times when not to operate.

There are still a few exponents of this operative extreme, but they are condemned by their own statistics and their own discussions. Their statistics show a much higher mortality-rate than those of surgeons who exercise some judgment in their selection of cases for operation. Surgery deals with human life, and it cannot be done by fixed rules. If we could say we must always operate, experience would be of little value. All that would be necessary would be to learn the rules. A surgeon, of all men, should avoid fixed rules and exercise reason and judgment in every case. He should base his opinion upon his own experience, upon the experience of others, and upon the conditions found in a given case, for no two cases are alike. A surgeon should be brave, and operate when he concludes that operation offers his patient the best chance, no matter how desperate that chance, but he has no license to be

foolhardy because it is the patient's life that is at stake, and not his own. One who operates for a record does not always have his patient's best interest at heart.

All surgeons and most physicians agree that chronic, recurring appendicitis should be operated upon in the interim. There are still a few physicians who tell their patients after an acute attack that they are well and need no operation. How they can do so conscientiously is beyond comprehension, because they know that a goodly number of those patients do have recurrences, and some of them with fatal results, while, on the other hand, operation in the interim by experienced surgeons is almost without mortality. Many surgeons of large experience can show an unbroken record. My first operation in the interim was performed on Feb. 11, 1893, and since that time I have operated hundreds of times without a single death. One patient from Wahpeton had chronic appendicitis when I operated upon him, but he came to me with chronic obstruction of the bowels, for which a resection of several inches of bowel was made with a fatal result. Patients who have had an acute attack resulting in abscess are sometimes told that they need no operation because the appendix has sloughed away, but when the surgeon operates upon these patients he always finds an appendix. It is sometimes abbreviated and shrunken, but still big enough to cause future attacks. At my first operation I was completely disgusted, because after cutting my patient both lengthwise and crosswise I found, behind the ascending colon, an inoffensive-looking shriveled-up remains of what had been an appendix. I felt that I had subjected my patient to a very grave operation without corresponding benefit. The outcome, however, was eminently satisfactory. Before the operation he had had frequent dangerous attacks of "perityphlitis" with abscess, and since the operation he has been in perfect health. Because the interval operation is so safe it does not follow that it is always safe to wait for the interval, for the patient may die before reaching that period. It has been very aptly said that an interval operation is a good thing to recommend in the interval.

I wish to call particular attention to the fact that many people suffer from chronic appendicitis who have never had an acute attack. These patients should all be operated upon, because the operation is perfectly safe and because they are

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almost certain, sooner or later, to suffer an acute attack with all its attending dangers.

Both physicians and surgeons agree that when a localized abscess is formed an operation is indicated.

All surgeons of large experience, and many physicians, agree that under proper conditions every case of acute appendicitis coming under observation within the first forty-eight hours should be operated upon at once. I hope, and believe, that the time is not far distant when this view will be universally accepted. Under proper conditions these operations can be performed with less than one per cent mortality, and that is better than can be accomplished by any other method. When this rule is adopted by all, appendicitis will have lost most of its terrors, and there will be no ground for controversy except in cases where the proper conditions can not be complied with and where the diagnosis has not been promptly made. Fitz, Osler, and other eminent internists are teaching this doctrine now, and it is to be hoped that their influence will convert the family physicians throughout the world, because they see these patients first. When a case goes beyond this stage it is the fault of the patient or his physician, and theirs is the responsibility. The patient's unwillingness to accept an operation does not relieve the physician of his responsibility, unless he has given the patient his positive opinion in favor of an operation. It is not the province of the physician or surgeon to ask the patient what he wants, but to advise him what he needs. Fortunately, the laity are so well educated in this matter in most communities that operation is rarely refused when earnestly advised. In communities where early operations are not popular it is the fault of the physicians in that community who have been advising late operations only, and then when they thought the patient was about to die. The surgeon cannot say to the physician, "Bring your appendicitis cases to me any time and I will cure them," but he does say most emphatically, "Make your diagnosis early, bring your patient within forty-eight hours of the beginning of the attack, and he can be cured ninety-nine times out of one hundred."

The proper conditions upon which I wish to lay great stress are hospital facilities and an experienced surgeon. Without these I believe early operations are contra-indicated. Fortunately this is the day of hospitals and surgeons, and there are very few who cannot comply with these conditions. If every physician felt it his duty to operate whether he had had experience in abdominal surgery or not, or if it were considered proper to operate everywhere, the mortality would be greater than if no operations were performed.

As a rule the early diagnosis is easy, and

should be made by anyone competent to practice medicine. That familiar train of symptoms can scarcely be mistaken: pain very commonly beginning in the epigastric or umbilical regions and gradually extending to the right iliac region; tenderness often all over the abdomen at first and gradually settling down to the region of the appendix; rigidity of the muscles on the right side, and vomiting. There are a few cases, however, in which the symptoms are masked and in which a positive diagnosis is difficult or impossible. When the patient is very ill, and what few symptoms there are suggest appendicitis, an exploratory opening should be made through the right rectus. The pernicious habit of administering an opiate for every case of bellyache has caused the loss of many lives by obscuring symptoms. Every attack of abdominal pain should suggest the possibility of appendicitis or some other serious condition.

When appendicitis is complicated by typhoid fever, pneumonia, severe la grippe, acute nephritis, or other conditions which contra-indicate an anesthetic, operation should be avoided as a rule, but even under these conditions a localized abscess should be opened under local anesthesia.

When a patient is evidently moribund he should not be subjected to operation, because it does him no good, and it does the cause of surgery harm.

I believe that when a patient is not brought to the surgeon's notice until he is evidently convalescing from an attack, he should not be operated upon, but that nature should be allowed to complete her work, and that he should be carried over to the interim and then operated upon.

Surgery cannot be scientifically done by the calendar. We cannot fix a rule that on a certain day we may operate for appendicitis, and on another day we must not. The nearest we come to it is at the beginning where the concensus of surgical opinion, based now upon a vast experience, is, that the first forty-eight hours of the attack is the safety period. Within this period the infection is usually limited to its original seat, and it can be completely removed, the wound closed, and all the dangers and annoyances of drainage avoided.

There is a time, beginning with the third day of an attack of appendicitis, when surgeons begin to differ as to whether we shall or shall not operate. We cannot hope to settle this vexed question today, for it is doubtful if it ever will be definitely settled, yet we can contribute our mite in the way of discussion.

When I am called to see a case of appendicitis on the third, fourth, or fifth day of the attack, and the patient is evidently doing well, I do not operate, because I have learned that when a patient is doing well at this time nature is doing

her part, and the rule is that the patient will either go on to convalescence without operation or that a localized abscess will form, making an operation a safe procedure. The danger of a case going wrong under these conditions has been greatly exaggerated. Over-zealous surgeons very greatly underestimate nature's work in these cases. If we could operate as safely at this time as we can in the first two days I would gladly do so, but I tried it a few years ago and failed to improve upon nature's methods, and in this practice I have a host of good company. I am sure that with my improved technic I could do much better now than I did then, but I am too well content with nature's work under these conditions to want to interfere.

It is easy to understand the difference between the early and the late cases. Under ordinary conditions an infection does not spread beyond its original seat within forty-eight hours, and the surgeon can remove it, making a complete operation, but after this period the infection has had time to spread, and for the first few days nature has not had time to complete her lines of defense. If the surgeon "butts in" at this time he interferes with nature's work, and is very liable to fail to take her place successfully because he cannot surely remove the infection, and he is liable to spread it.

When the attack has been going on for three, four, or five days, and the patient is doing badly, the natural instinct of the surgeon is to interfere. He feels that nature's efforts have failed and that the patient's only hope is in operation, but it has been demonstrated by Ochsner and his followers that immediate operation is not his only hope, and if statistics are worth anything, they have demonstrated that his chances are better to wait. Personally I am still at sea in these cases. I decide each case upon its own merits to the best of my ability, and operate or wait as seems to me best at the time, and no matter which course I pursue I sometimes wish I had chosen the other one.

When I am called to a distance to see a patient within the first few days of the attack, I always feel relieved when the attending physician tells me he wishes to consult with me as to the advisability of an operation, for there is always a chance for an honest difference of opinion. It is embarrassing to both surgeon and physician when the former is called to perform an operation and feels it his duty to advise against it.

The so-called "Ochsner method" has been so generally misunderstood and misapplied that regardless of its real merit, it has done infinitely more harm than good. Dr. Ochsner is an earnest advocate of early operation for appendicitis. He does not recommend starvation and lavage for appendicitis, but he does recommend them

for a spreading peritonitis due to a neglected appendicitis. The treatment, or rather the neglect of early cases of appendicitis, by starvation and lavage has caused the loss of many lives that might have been saved by early operation.

There remains for our consideration that grave class of cases in which the patient has a so-called general peritonitis. I say *so-called* advisedly, because it has been demonstrated that a general peritonitis is, to put it mildly, a very rare condition. The patient's abdomen is distended, is hard and boggy to the touch, his pulse is high, he gives the history of having had a fluctuating temperature with possible chills and sweating, and he is septic and has been so for some time. I cannot understand the mental processes of men who report ten, twelve, and sixteen cases of this class in which they have performed the radical operation with a mortality of one hundred per cent, and who still advocate the radical operation. These patients do not all die when treated differently. I can still remember going from my own college to the University of New York to hear Professor Loomis deliver his famous lecture on the treatment of peritonitis by four-grain doses of opium. His patients did not all die. A few years ago I performed the radical operation upon a very few of these cases, and they all died promptly. Since that experience I have been content to open abscesses locally, and to carry out, to a greater or lesser extent, the plan of treatment so admirably set forth by Dr. Ochsner, and I have succeeded in carrying a number of these patients over to a safe interval operation. That old dictum so forcibly laid down by the late Dr. Sayre, that the presence of pus always demands free incision, has been overworked. The mere presence of pus is not the point at issue. The question is whether the septic material is being absorbed so rapidly as to overcome the resisting powers of the patient. We all know that nature does often take care of large quantities of pus, and this is particularly true in the peritoneal cavity. In face of this fact, what right have we to perform an operation with such an appalling mortality? What surgeon is present who has not removed tubes from the pelvis which had contained pus for months and sometimes for years? What one among you knowing of the presence of pus in the tubes during the acute stage will not wait for a safe operative period? You often drain through the vagina during the acute stage, but you do not undertake the radical operation at that time.

During the past few months I have had but five cases of appendicitis of this extreme type. One referred by Dr. Cleveland, of Osakis, Minn., two by Dr. Ridgway, of Annandale, one by Dr. Cutts, of Forest City, and one by Dr. Tarbell, of Watertown, South Dakota. These patients were

all treated expectantly, and are all alive today. Had I performed the radical operation upon them, judging from my former experience, they would all have died. I am morally certain that some of them would have died.

In Dr. Cleveland's case no operation was performed for nearly three months, when I performed an interval operation successfully. In one of Dr. Ridgway's cases, several abscesses were opened locally, and fecal fistulæ formed. I operated later, removing the appendix and closing the fistulæ successfully. His other patient, a seventeen-year old girl, had a most extensive peritonitis, for which I drained through the vagina, evacuating immense quantities of pus. She is now in apparent good health and expects soon to have her appendix removed.

Dr. Cutts' patient had pus seemingly in every corner of his abdomen. I opened first high up on the left side and later over the appendix. He was, at last report, in April, in good health, but had suffered one mild recurrence, and still has a fistula. His foolish parents, who are responsible for his former bad condition, have so far prevented him from having his appendix removed.

Dr. Tarbell's case is still in bed most of the time, but is improving. I have opened several abscesses, and am waiting for the proper time to remove his appendix.

To recapitulate: I believe that there are times in appendicitis, as in all other surgical diseases, when operation is not the best treatment. I believe that the radical operation should not be performed (1) when the patient is evidently moribund; (2) when the patient is evidently convalescing; (3) when certain grave complications are present; (4) in the midway cases beginning with the third day when the physician and surgeon are in doubt; (5) in the extreme cases of suppurating peritonitis.

In conclusion, I wish to state that some of these opinions concerning these later cases are in all probability not final with me, and that should I have the privilege of reading to you again upon this topic a year or more hence, the chances are that I shall have modified them. I hope to die before I reach a point where I am no longer open to conviction, for I agree with Emerson that a man who never changes his mind probably has no mind to change.

DISCUSSION

DR. J. B. MCGAUGHEY, (Winona): It is a very great pleasure to listen in this age and time to a paper as conservative, valuable and instructive as the paper Dr. Moore has presented to us. It seems to me, from the present state of knowledge, that very little fault can be found with his position. He defines clearly the difference in the varied forms of appendicitis. I think in the care of this disease the family physician is too often blamed for not recommending an operation. It is the experience of every family

physician that he frequently is not called until the proper time for operation is past. I know that I have frequently been called to cases on the fourth, fifth, or sixth day, during which time the patient had had no medical attention, and had not even been confined to his bed.

After the third or fourth day, in a severe case, I quite agree with Dr. Moore that that is the time not to operate. Observation in years of practice, commencing before we knew the term appendicitis, has convinced me that many of those cases will go through the first attack without operation. No one knows whether in a given case recovery will take place or not. The rule to operate as soon as your diagnosis is made, is correct, provided you make or have an opportunity to make it early. When early diagnosis is not made the case promises more if left in nature's hands, under the treatment which I believe to be invaluable, recommended by Dr. Ochsner.

I congratulate Dr. Moore upon his success in his operations. That success seems to come only to a careful, conservative man in hospital practice.

DR. J. W. ANDREWS, (Mankato): A few years ago we were taught most emphatically by Dr. Murphy, of Chicago, and others to operate upon a case of appendicitis if we could get the opportunity any time within the first three days. I believe that teaching is wrong, and I am presuming a great deal when I criticise so able a surgeon as our worthy friend Dr. Moore who has read the paper. At least I am convinced of this fact, that no time limit should be placed for operation upon a case of appendicitis. I have had cases where inflammation had not existed, or any symptoms, for more than twenty-four hours, and I would not dare to operate upon such a patient. There is no surgeon or physician here who has had experience with appendicitis who has not had cases of young people where the pulse was ranging from 120 to 150, and with a temperature ranging from 102° to 103°, I do not care whether that case has been running one hour or forty-eight hours, I do not believe it ought to be operated on, and I believe many lives would be saved by the adoption in these cases of Ochsner's method of treatment, i. e., carrying them over to the interval. I have had cases, and I believe it is the experience of every surgeon, rather light cases, but well marked and defined, where they had been running two, three, or four days, and yet sometimes the pulse is running but little above 100 and the temperature 101° to 102°. I believe it is safe to operate in such a case, whether it is three days or four days, and I would be very particular to operate at that period. But in a severe case, in the early stage, I am fully convinced of this—and I would repeat it to make it emphatic—that those cases should not be operated upon regardless of the time, and I believe any teaching that fixes a definite time, twenty-four hours, or two days, or three days, that fixes a time when the operation may be safely performed, is wrong teaching.

I wish to make this observation that I may have some light upon the question, and I hope it will be noticed in the discussion, and that Dr. Moore will refer to it in his closing remarks. A case comes to the hospital from a long distance, but is not in a condition to be operated upon, and under Ochsner's treatment it improves, and after a week the temperature and pulse are normal, and the patient seems in good condition to operate upon, what will you do? I will say that I have operated on a number of cases of that kind, and have been reasonably successful with them. Of course, it is not very easy to send a patient back home, perhaps fifty or a hundred miles, and tell him to come again after a few weeks when he is in good condition. It has been

a question with me whether the operation should be performed at that time, or whether it is better to send the patient home and trust him to come back.

DR. C. W. MOORE, (Eveleth): I want to congratulate the author upon the thoroughness with which he has handled the subject and the concise summing up. I believe it better not to operate unless sure of the diagnosis, or, at least, that the disease is an operable one. The most favorable time to operate is during the first few hours, and the next most favorable time is the interval, after the patient has recovered from the first attack. Here the mortality is the lowest, provided you do not operate too early in the interval. During the first few weeks there is great danger of liberating concealed virulent organisms and inoculating the peritoneum, death following in forty-eight hours.

DR. J. E. MOORE, (Essayist): I am very glad, Mr. Chairman, and it gratifies me very much, to have a man of Dr. McGaughey's experience and standing agree with me; it flatters me. He speaks of the blame attached to the family physician. We all realize that often the physician is called when the responsibility is gone by. It has been assumed by the patient or his friends. I wish to call Dr. Andrews' attention to the fact that I did not place the time limit, for it could not be done; and when the doctor says he differs from me and that he does not

operate at that time, I can simply state that his experience differs from that of surgeons the world over.

He asked how to handle cases that have been in the hospital several days and are doing well. I think those are cases in which the surgeon can exercise a great deal of judgment. If he is certain the patient will return when he is told to return, I think it is wise to let him go, but if he is remote from the hospital, or there is an element of uncertainty about his returning, I think it is well to operate before he goes, for it will give him a greater chance of long life.

Dr. Moore asks the question, When does the interval begin? That is an arbitrary matter, depending on different environment and cases. There is one case I mentioned, a patient of Dr. Cleveland, where the patient suffered with so-called general peritonitis. I sent him home at the end of six weeks, and told him to stay at home for two or three months and then come back. He came back, and I operated upon him successfully, and he returned home three weeks after the operation. Those cases that had a less severe attack could be operated on earlier than that. There is no fixed time to be set. You have to exercise in all cases your judgment the same as you do in individual cases. You cannot fix the time when the interval begins.

A CASE OF TYPHOID FEVER, WITH COMMENT ON THE RELATIONAL PATHOLOGY OF THE DISEASE*

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The following clinical history was chosen because, in its course, this case presented some points of unusual interest, and in its general manifestations resembled closely the clinical picture of typhoid fever in the insane. It is not an uncommon experience for us to have cases of typhoid fever committed to the hospital, in which the mental disturbance has obscured the other symptoms; or, on account of its conspicuousness in the clinical picture, dominated the interest and attention of those in charge of the case. For this reason we learn some things about typhoid fever, which do not ordinarily attract attention in general practice. Besides, having some typhoid fever with us all of the time, certain aspects of its pathology are apparent to us that are not referred to in current medical literature.

H. A. M., single; occupation, nurse; born in Minnesota. Father Irish, mother Scandinavian. Father a chronic alcoholic, who died of nephritis. Mother living, neurotic. Paternal grandmother died at 65 years of age of cancer. Maternal

grandfather died at 80 years of dropsy. Maternal grandmother living at 90 years of age.

The patient was born after a prolonged labor; delivery being accomplished with the forceps. He had "boils" on the head for three months after birth, and was a puny child. He had measles when ten years old, but has been fairly healthy since. He is good-natured, but quick-tempered, and somewhat eccentric.

On September 14th, 1904, he began to suffer from headache and dizziness. At night he had chills, followed by sweating. The next day he began to have pain in the abdomen, and the next day diarrhea. The diarrhea, pain, headache, chills and sweating at night continued, and he was put in bed September 19th. The next day the Widal reaction was present, and again at the end of a week. The body temperature was high from the first, being 105° when he was put in bed, and it remained near that point during the first week. There was no particular physical discomfort after he was put in bed, the tongue was fairly clean, the diarrhea subsided, there was very little distention of the abdomen, the spleen

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could barely be felt, and the lungs were not involved. He was somewhat exalted, and inclined to be garrulous. During the period of continued fever the urine was not diminished in amount, but on the contrary, rather increased in quantity. The temperature was normal on the 17th day, and he was apparently convalescent.

A week afterward, following dietary indiscretion, his temperature began to go up again. With the rise in temperature he began to be depressed, restless, did not sleep, and complained of great bodily discomfort. In the morning of October 15th the temperature went up to 101.4° , and in the evening to 103.8° . After this the temperature varied between 102° and 104° for fifteen days, and was not normal for three months. He became delirious, picked at the bed clothes, and slept very little. The diarrhea returned and the stomach became irritable. Within a few days the bowels and bladder were emptied involuntarily, and a bed sore developed over the sacrum. He became rapidly emaciated; the action of the heart was weak, and both ventricles were dilated. Respiration became rapid, he began to cough and expectorate, and the bases of both lungs showed hypostatic congestion. The sputum was purulent, contained strepto- and staphylococci, and a week later pneumococci. On several occasions between October 21st and 28th he collapsed; the heart's action was very weak, and the pulse almost imperceptible. From October 25th to 29th he was very restless, almost constantly in motion, and slept very little. Respiration was rapid and shallow, subsultus was present, and there was muttering delirium. On the morning of October 29th he had a tetanic convulsion, with risus, trismus and opisthotonos, the eyes were wide open, the pupils small and fixed, but consciousness was preserved. The heart impulse was barely perceptible, and the radial pulse could not be felt.

He rallied after a time, but remained very weak; the rectal and vesical incontinence persisted; bed sores formed over the buttocks, both trochanters, and at the heels. The emaciation was extreme. The delirium persisted, there was auditory and visual hallucination, with the furtive suspicion, impulse to escape, and to hide away, that are so characteristic of the wounded animal. Later there was further mental reduction shown by the impulse to self-destruction.

The points of especial interest in this case are the involvement of the general nervous system, the nature of the convulsion, as well as the relatively greater severity of the illness in the relapse. The clinical history indicates that the specific disease, during the primary attack, was the least important element in the illness. It is true that the temperature range was characteristic, but the upward excursions were extreme and not

associated with involvement of either the lungs or intestines. There was very little enlargement of the spleen, no tympanites; the respiration was very little affected, and the pulse did not go above 90. However, the eruption was present in both attacks. There was an increased amount of urine; but, according to the routine methods of examination, the urine did not indicate involvement of the kidneys. The different urinalyses in this case have been grouped into a table for convenience (See next page).

It has practically always happened, in our experience, that typhoid fever with the ordinary clinical manifestations in abeyance, exhibits more or less extreme involvement of the lungs or nervous system; and even if these particular affections are not apparent during the illness, they will become so later; prolong the convalescence, or generate chronic invalidism. It is not uncommon to have an attack of typhoid fever ushered in with a typical lobar pneumonia or to have the illness prolonged by a bronchopneumonia. In the former the evidence of the typhoid fever has been in abeyance until after the crisis. The involvement of the nervous system shows itself in various ways, but usually in delirium, insomnia, coma, or profound trophic disturbance. In one case the temperature did not go above 99° , and the most conspicuous symptom was persistent headache. During convalescence this patient had extreme hysterical manifestations, with globus, convulsions followed by a herpetic rash and intense pharyngeal congestion; also phantom tumor. Prolonged high temperature not only affects the general nervous system, but also serves to indicate the involvement of the thermotaxic mechanism. Prolonged high temperature indicates, as a rule, extreme involvement of the intestine or lungs, but in the case here reported, in spite of the high temperature, in the primary attack, the involvement of the intestine was apparently very slight, and the lungs were not involved at all. In the neurotic and the insane, we have come to believe that the thermotaxic mechanism is more easily disturbed than in the normal individual, and that high temperature is generated just as it is in the unstable nervous system of the child. We have the record of one case of typhoid fever occurring in a demented patient, in which the temperature went up to 107° , and remained at that height for five days, in spite of all measures taken to reduce it. However, no apparent harm resulted. In the case here reported, the fact that the temperature during the primary attack was not materially affected by any measures used, would indicate that the degree of its elevation was in a measure a neurosis, although the only evidence of cerebral involvement was a slight exaltation with garrulity. However, if the history of the case, both family and

personal, is considered, there will be found abundant reason for the involvement of the nervous system both in the primary attack and the relapse; while if the urine analysis is carefully considered, the reason for the profound illness during the relapse, and the peculiar motor manifestations, will be apparent.

In our experience, decrease in the output of urea in the 24 hours urine, is the first evidence of the involvement of the function of the kidneys in typhoid fever. Albumin may or may not be present, but if it is, it means that the kidneys were already diseased, before the illness with typhoid fever began. The presence of albumin in the

urine in typhoid fever indicates serious involvement of the alimentary canal, and, indirectly, interference with processes of genetic metabolism—especially those involved in the conversion of the proteid substances into tissue material. In such cases there is practically always edema during convalescence. In the case under consideration, however, while there was marked reduction in the excretion of urea at first, and during convalescence from the relapse; there was progressive reduction in the excretion of the chlorides, until, in the second week of the relapse, they disappeared altogether from the 24 hours urine. *Pari passu*, with the reduction in the excretion of the

	9-23-04	9-30-04	10-20-04	11-2-04	11-15-04	12-1-04	12-13-04	1-30-05
Quantity, 24 hours (cc)	1100	1900	1000	900	950	2000	1750	1750
Specific gravity	1010	1010	1013	1015	1001	1006	1012	1020
Color	Yellow Clear	Yellow Clear	Yellow Clear	Yellow Clear	Pale Opalescent	Yellow Clear	Yellow Clear	Yellow Clear
Reaction	Acid.	Acid	Acid	Acid	Acid	Acid	Acid	Acid
Urea	0.8 per cent	2 per cent	2 per cent	2 per cent	0.3 per cent	0.6 per cent	0.6 per cent	0.8 per cent
Phosphoric acid	0.17 per cent	0.2 per cent	0.4 per cent	0.4 per cent	0.1 per cent	0.2 per cent	0.13 per cent	0.2 per cent
Chlorides	0.26 per cent	0.8 per cent	Absent	Trace	0.1 per cent	0.5 per cent	2 per cent	1 per cent
Sulphates	0.25 per cent	0.3 per cent	0.25 per cent	0.5 per cent	Trace	0.1 per cent	0.5 per cent	0.5 per cent
Indican	Decreased	Normal	Normal	Normal	Decreased	Decreased	Increased	Decreased
Mucin	Decreased	Normal	Normal	Normal	Normal	Decreased	Normal	Normal
Fibrin	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Albumen .....	.....	Trace	0.2 per cent	Trace	Absent	Absent	Trace	Trace
Albumoses (Primary) .....	.....	Trace	0.2 per cent	Trace	Absent	Absent	Absent	Trace
Globulin .....	.....	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Deutero-albumose ....	.....	Trace	Present	Present	Absent	Absent	Absent	Trace
Biliary coloring matter .....	.....	Present.	Present	Present	Absent	Absent	Present	Present
Sugar .....	.....	0.2 per cent	0.2 per cent	0.25 per cent	Absent	Absent	Absent	0.25 per cent
Diazo Reaction .....	.....	Absent	Present	Present	Absent	Absent	Absent	Absent
Diacetic acid .....	.....	Present	Present	Present	Absent	Absent	Absent	Absent
Leucocytes .....	.....	.....	.....	.....	Numerous	.....	.....	.....
Leucocyte Casts.....	.....	.....	.....	Present	.....	.....	.....	.....

chlorides, there developed the evidence of the involvement of the bulbospinal nervous mechanism, and the marked trophic disturbance indicated by the extreme decubitus; the muscular twitching, subsultus, and finally the tetanic convulsion. Uremic convulsions are practically always cerebral, and epileptoid in character. They are preceded by diminution in the amount of urine, and the relative proportion of urea excreted in the 24 hours, but in this case the convulsion was tetanic, and was preceded by the disappearance of the chlorides from the 24 hours urine.

The bearing of the history in this case upon the relational pathology of typhoid fever is shown by the peculiarity of the manifestations, and by the fact that the intoxication spent its force on that part of the organism that naturally was the least resistant. The involvement of the nervous system from the beginning, and the comparative mildness of all of the other clinical manifestations during the primary attack, showed that the instability of the nervous system was the determining factor in the establishment of the clinical course of the disease. Again, the high temperature, that persisted in spite of the measures used to reduce it, shows that there was involvement of the thermotaxic mechanism which the instability of the nervous system made extreme, and in a measure uncontrollable. The psychic manifestations were peculiar in the primary illness, in that there were exaltation and garrulity instead of hebetude and indifference. At the same time, as shown by the urine analyses, the processes of metabolism were being affected to a considerable extent; therefore, when the relapse took place, the re-intoxication resulted in such profound trophic involvement as was shown in the extreme decubitus, the extensive destruction of tissue, as well as the prolonged illness, great emaciation, and slow convalescence.

It has always appeared to the writer that a great deal of confusion might be avoided, a clearer and more definite diagnosis made, and a more rational and successful plan of treatment followed in typhoid fever, if the relational pathology in the individual case was always taken into account. With the aid of blood examinations and urinalyses at regular intervals, the influence of the disease on the general processes of metabolism could be definitely determined; while the careful investigation of the family and personal history of the patient would disclose the organic point of greatest weakness and least resistance. Finally there remains for special consideration the fact, so apparent and yet so little considered, that the infection being a general one, the persistence of the involvement of the organism, as well as its severity, will depend not only upon the continuance of the infection, but more particularly upon the imperfect or incomplete elimina-

tion of the accumulated toxins. On this account, the greatest danger in typhoid fever comes from the involvement of the lungs and kidneys. Next in importance is the auto-intoxication superadded to the specific infection by the fermentation and putrefaction of undigested food. The presence of active delirium always means involvement of the nervous system, and coma its profound intoxication. But in these cases, if careful urinalyses are made, it will be found that this intoxication results from functional incapacity in the kidneys, either from the presence of disease or congenital incompetence, which prevents the elimination, not only of the toxins of the specific infection, but also those resulting from the excessive tissue waste accompanying the disease.

DISCUSSION

DR. S. MARK WHITE, (Minneapolis): We are especially indebted to Dr. Tomlinson for bringing out the features of typhoid infection upon which he has laid special emphasis tonight. Of utmost importance is a fact which we are beginning to face in typhoid fever, namely, that it is not a local disease, but that we have to deal with a general infection and a widespread toxemia. It has been shown by blood cultures taken from typhoid patients, that, during the second week and often during the latter part of the first week, the typhoid bacillus is present in the blood in the great majority of cases, and probably in nearly all.

The pathology of the disease teaches us that cellular proliferation, the visible results of the disease, may be found practically in all organs, and the widespread nature of the infection is thus shown. When we come to the treatment of the condition the recognition of this fact naturally helps us very materially in directing remedial measures toward the disease.

Dr. Tomlinson has laid special emphasis upon another point which is related to this fact, and which to us is of extreme importance, and that is that these toxins will select tissues that at the time of infection offer the least resistance. Dr. Tomlinson's experience is a peculiar and interesting one, in that he comes into contact with patients whose nervous system is the point of least resistance, and he sees manifestations which the general practitioner seldom has an opportunity to see. We must recognize, first of all, the tissues upon which the typhoid is working with the greatest virulence as the point of attack, and we must consider these tissues in our treatment of the disease. His suggestion is good that all cases where there is primarily a decreased resistance on the part of the nervous system are cases in which the thermotactic organism may be most readily attacked, and as an effect of the toxins we get just such manifestations as are shown in the terrifically high temperatures and these excessive convulsive seizures.

DR. H. B. SWEETSER (Minneapolis): It is some time since I have had much to do with the care of typhoid fever, but, since Dr. Tomlinson has asked me to take the place of another in this discussion, I gladly do so. I think the doctor is to be congratulated on the fact that he has facilities at his command for making so scientific a study of any individual case of disease. If you will merely glance at the urinalysis chart, which is being passed around, you will appreciate what an immense amount of work it must have involved, and how impossible it would have

been for the general practitioner to have made such a study of a case in private practice or even in a hospital, for no ordinary interne could have made such extended urinalyses as were made in this case. Only in such institutions as the one over which the doctor is fortunate enough to preside can such things be done. We may, indeed, congratulate ourselves that we have within the borders of our state such an institution, where so scientific observations may be made and recorded, for it is from these that results arise which may accrue to the benefit of all of us.

Concerning the deduction of the writer, that the toxins of typhoid fever especially concentrate themselves upon the nervous system in certain neurotic cases of insanity where inflicted with the disease, I think we may take exception to this, in that it is too narrow a view; for, in my experience, in almost all cases of typhoid fever, the toxins do expend themselves upon the nervous system mostly. This is so well recognized that "nerve" fever has come to be one of the synonyms for typhoid. Even in the mildest cases a most marked impression upon the nervous system is observed, as evidenced by the in-

tense headache, the high temperature, the stupor, tremor, marked emaciation, and other trophic disturbances. That these symptoms are due to poisoning by the toxins and not to any real organic change, is evident from the fact that they are temporary in the vast majority of cases, and subside as the toxins are eliminated. Even if true insanity results the patient rarely remains permanently insane.

There are many other things in the paper which have been very wisely put and which we ought to appreciate. These I regret very much that I am not able to lay stress upon, but the time limit for discussion prevents even mention of them.

DR. C. H. HUNTER (Minneapolis): I would like to ask whether Dr. Tomlinson was able in this particular case to modify the course of the disease by any treatment that he was able to devise?

DR. TOMLINSON: There was nothing done to modify the course of the disease in any way. It ran its regular course.

DR. HUNTER: Are you able to do that?

DR. TOMLINSON: No.

INTESTINAL TUBERCULOSIS, WITH REFERENCE TO RESULTING STENOSIS*

BY R. E. FARR, M. D.

MINNEAPOLIS

Tuberculosis is probably the most frequent infection of the intestines. As a primary affection it is considered comparatively rare. It was found but once in 1,000 autopsies upon tuberculosis subjects at the Munich Pathological Institute. Spengler found that autopsies constantly showed that children were not the subjects of primary intestinal tuberculosis, the bronchial glands being invariably involved first.

At this time there is abundant evidence, both clinical and experimental, that tubercle bacilli may gain entrance to the body through the intact intestinal mucous membrane, and thence attack more vulnerable points, generally the mesenteric lymph glands and the pulmonary apices, without producing any appreciable lesion at the point of entrance. Undoubtedly, many are infected in this manner; and, indeed, some observers believe this to be the usual mode of systemic infection, but it is generally conceded that the common source of pulmonary tuberculosis is through the respiratory tract.

Primary infection of the intestinal tract, when it occurs, results directly from the ingestion of the tubercle bacillus with articles of food, generally milk or meat. Conclusions formed from post-mortem observations exclusively cannot, however, be to any great extent indicative of the relative frequency of primary and secondary intestinal tuberculosis, as they only show end-re-

sults. Observations upon the living subject during surgical operations seem to demonstrate that a larger proportion of tubercular intestinal lesions are primary than was formerly supposed. This is more especially true of the hyperplastic form, and those cases in which there are only a limited number of ulcers. Of course it is difficult to say in a given instance that there exists no other focus of the disease, but cases are fairly frequent now in which there is no history nor clinical evidence of the involvement of the lung or other important organ.

Intestinal tuberculosis is a common complication of pulmonary tuberculosis, a large proportion of people dying of pulmonary phthisis showing some intestinal lesions which are caused by the tubercle bacillus.

Secondary infection results directly from the swallowing of tuberculous sputum, or, rarely, from rupture of caseous glands into the esophagus.

The condition of the digestion may have a direct bearing upon the etiology. The acid gastric juice having a destructive action upon the tubercle bacillus inhibits its action when normal. When, however, the secretions are deficient, the germs pass on unchanged and attack the bowel. In the intestinal canal a diseased condition of the mucosa may predispose to the disease. Infections, lesions due to trauma, and various other causes may thus invite the infec-

*President's Address. Read before the Minneapolis Medical Club, September 20, 1905.

tion. The lymph follicles absorb the bacilli along with other materials. The fecal stream being slowest in the lower end of the ileum favors the development of bacteria, and on account of the abundant lymph supply in this region absorption and infection more readily result. Any part of the alimentary tract may be attacked, but for the above reasons the lower end of the ileum and the cecum are the usual sites. A large portion of the intestinal canal may be affected at once, usually in cases with advanced pulmonary disease, in which case death soon follows.

Intestinal tuberculosis is one of the chief sources of tubercular peritonitis, and is considered by many to be the chief source, the other main sources being perhaps through the fallopian tubes and the mesenteric glands. The disease is one of childhood and early adult life, and, in general, may be said to run a more benign and chronic course in the latter, being, therefore, more amenable to treatment, infants and young children usually being quickly overcome.

The lesions due to intestinal tuberculosis may be classified as follows:

1. Extensive multiple secondary ulcerations with no tendency to recovery.
2. Single or multiple primary or secondary ulcerations, generally in the lower ileum, which tend to heal.
3. Hyperplastic tuberculosis.

The first two classes differ mainly in degree.

1. The disseminated form is a complication of pulmonary tuberculosis, the intestines being infected directly from the swallowed tubercular sputum. These individuals are usually marasmic, and ulcers here, as in other parts of the body, show little tendency to heal, but rather to increase in size and number. Unfortunately this form is most common, is not amenable to treatment, and is rapidly fatal.

2. In the second form the patient is generally in a better state of health, the lungs usually show a healed or latent tuberculous process, and in a considerable number of cases nature has won a partial victory over the disease. The typical ulcer or ulcers are usually in the ileum or the first part of the colon, and show a marked tendency to heal.

On account of the transverse direction of the lesion the resulting scar frequently encroaches upon the lumen of the bowel. Eisenhart, quoted by von Bergmann, states that 25 per cent of cases give symptoms of stricture. These cases, occurring as they often do in people who are in fair health, offer a brilliant field for surgery. The strictures are usually single, but may be multiple. They vary in size, and may involve an area of two or three inches of the bowel-wall, or consist of a fibrous band only. The closing-down

process is a slow one, and the symptoms of chronic stenosis gradually present themselves.

HYPERPLASTIC INTESTINAL TUBERCULOSIS

In recent years a condition designated as hyperplastic intestinal tuberculosis has frequently been described, and many reports of cases have been published. It is worthy of note that only a small number of these cases have been reported by American or English surgeons. In 1900 Crowder could find reports of but two instances in England and one in America. The German and French surgeons have contributed a vast majority of the cases and most of the literature upon the subject.

The condition is characterized by an extensive connective-tissue infiltration of the tissues involved, resulting in great fibrous thickening of the bowel-wall. The cecum is the usual location, over 85 per cent of the operated cases having involved this portion of the bowel, though any part of the large or small intestine may be implicated. Or, as in a case reported by Lartigau, the greater part of the intestinal canal may be the seat of the disease. The rectum is most often affected after the cecum. Here the growth has often been confused with syphilis of this organ. In the cecum it presents many points in common with cecal carcinoma, and many of the cases of reported recovery from the latter disease were probably not carcinoma, but tuberculosis of this organ. These two conditions have occasionally been found to co-exist, as in Senn's case, reported by Crowder, and it is not improbable that the irritation produced by tuberculosis of the bowel may predispose to cancer in the same region.

The growth consists in an infiltration of the coats of the intestinal wall, the muscular and serous layers sharing the least and the submucous and subserous layers the most in the process. The mucous membrane may be greatly thickened also. Fatty infiltration is common, while cheesy degeneration seldom occurs. The mass may reach the size of a fist or even larger. Polypoid and papillomatous growths are common in the narrowed lumen of the canal, which they may completely obstruct. Stenosis is the inevitable result in case the patient's general health remains sufficiently good. The walls above the narrowed lumen invariably show hypertrophy, as they do in other forms of stenosis. This hypertrophy may be much greater than might be expected from the amount of narrowing present, and in some cases may be considered as a part of the pathological process.

The tumor mass is usually fixed at its mesenteric attachment by the greatly thickened fibrous tissue, though in some cases the growth may be

freely movable. The mesenteric and retroperitoneal glands are generally enlarged, but show little tendency to cheesy degeneration. Adhesions to the surrounding coils of intestine and the parietal peritoneum are not usually extensive, but may be so dense that the tissues become unrecognizable. Abscess formation, fistulæ, etc., are rather rare complications. The appendix is generally secondarily involved. In 1902 Crowder reported a case operated upon by the late Dr. Fenger, in which the appendix showed the typical picture of hyperplastic tuberculosis, only a small portion of the cecal wall being involved. He infers that the disease might have begun in the appendix in this case.

Symptoms of Stenosis.—As in the cases presenting healed intestinal ulcers, these patients are commonly in fairly good health, in many instances the condition being primary and localized thus, presenting a favorable field for cure by surgical means. The sexes appear to be equally affected and most cases occur in patients who are between twenty and forty years of age.

Stenosis resulting from scar may give a more or less distinct history of previous ulcer. In the hyperplastic form there may be no such history, though bleeding is not uncommon. The latter form is also usually characterized by tumor formations. Aside from these points, the clinical picture is much the same,—that of chronic obstruction.

As the narrowing gradually develops, more or less digestive disturbance is apt to occur. Loss of appetite, belching of gas, coated tongue, and fetid breath are common. In general, the higher the stricture is located the more marked will be the gastric symptoms, and the lower the location of the stricture the more marked will be the intestinal symptoms. Colicky pains, always appearing about the same number of hours after eating and made worse by indiscretions in diet, are characteristic. Attacks of constipation accompanied by pain and distention over a certain area of the abdomen, followed by diarrhea and relief, occur frequently in these cases. The segment of bowel directly above the stenosis becomes dilated, and its walls become thickened from the increased work thrown upon them, and the contractions may be visible. These may consist in increased peristaltic waves, or tonic contraction may occur, lasting for some time, during which the intestine may be felt as a hard-walled tube, as it endeavors to force the contents of the bowel through the narrow opening. In strictures high up this effort is apt to result in regurgitation. The pain and tumor disappear as the feces are forced on, or regurgitated. When present, this train of symptoms is diagnostic of intestinal stenosis. The waves always begin and end at

definite points, respectively. In the case of multiple strictures, one series of contractures may follow another, as the fecal mass reaches each successive stricture, and in this manner lead to a suspicion of the true condition. Increased peristalsis and tonic contractions may occur in some neuroses, but here the portion of the intestine affected will vary at different times, and dilatation will be absent.

In stenosis of the colon the symptoms are usually slight. The bowel is greatly dilated, and though constipation is the rule there may be marked diarrhea as a result of catarrh from retention of feces. Alternating constipation and diarrhea are usual with tympany in the flanks.

Any sudden occlusion of the gut will of course at once give the symptoms of acute obstruction. Stenosis due to tubercular disease must be differentiated from other forms of stenosis upon the clinical history, bacteriological findings, the age, and general appearance of the patient, and the presence of tuberculosis in some other organ. The hyperplastic form may be confounded with carcinoma in the cecal region. Cancer occurs most often in the rectum, and its subjects are older. There is an absence of fever, generally more hemorrhage, and no tubercular history. The diazo reaction will be absent. In a certain number of cases the microscope will be necessary in making a diagnosis.

In the rectum the disease is most often mistaken for syphilis of this organ.

Treatment.—Palliative treatment of stenosis of the intestine consists in a careful regulation of the patient's diet, and in maintaining the proper consistency of the feces. In strictures of the small intestines laxatives are unnecessary, as the feces are constantly liquid here. They often cause pain by increasing peristalsis. Constipation should be relieved by enema. Acute obstruction may occur at any time from indiscretions in diet, kinking of the intestines, etc., and an immediate operation may be necessary to save the patient's life. This contingency should not be awaited, however, and in all cases in which the diagnosis is reasonably sure an exploration should be made. It is a well established fact that tubercular patients stand the strain of surgical procedures well. Death is the inevitable result without surgical intervention.

The operative procedure must be elected after an examination of the affected parts, and a careful consideration of the conditions present.

Resection of the diseased area is ideal if it can be accomplished without too much technical difficulty or risk of life. Entero-anastomosis will re-establish the fecal stream, and can be accomplished quickly. A Murphy button may be used

in either resection or in making an entero-anastomosis, providing the distal segment has been examined and found to be of normal caliber. In some cases it may be necessary to establish an artificial anus. Intestinal elimination has no advantages over entero-anastomosis, and should not be performed unless the eliminated portion is to be resected later.

REPORT OF CASE

At this time I wish to report a case occurring in my practice which is somewhat unique in that but few similar cases are recorded in the literature. Incidentally it illustrates to some extent what may be accomplished in the surgical treatment of this and allied conditions.

Mrs. J. J. K., aged 26. Has two children, one three years and the other four months old. Married four years. For some years before marriage she had "lung trouble," but since marriage the lungs have given her no trouble. Two years ago she had several attacks of pain in the upper abdomen, which was diagnosed by a physician as gall-stone colic. Thirteen months ago she became pregnant. During the last three months of pregnancy she complained of loss of appetite and much lassitude and vomited often. Four months ago she had normal labor. She was up on the eleventh day. About this time she began to cough some and noticed that coughing gave her abdominal pain. This cough has continued. She did not pick up after labor. About two months ago she began having colic, first in the sides of the abdomen, later becoming general. These occurred several times a day, and during this period the bowels moved with difficulty. After two weeks of this, diarrhea supervened for two weeks, when she suddenly became much worse, vomited, and suffered from severe abdominal pain. The abdomen became very much distended and tender. She could retain no food. One week later she passed some blood by the bowel. The abdomen has been very tender and sore since, the pain almost constant and the stomach irritable.

On examination I found a very thin, anemic woman, tongue coated, abdomen flat, but rigid all over. Vaginal examination was negative except for some tenderness in the region of the right tube and ovary. The apex of the lung showed slight consolidation. Pulse, 110; temperature 100°. A probable diagnosis of tubercular peritonitis was ventured.

Operation.—The abdomen contained no free fluid. The stomach, gall-bladder, and appendix were apparently normal. The pelvis was completely enveloped in a mass of red, recent adhesions. No hemorrhage resulted from their separation. The left tube appeared normal, ex-

cept for a very marked redness, which was common to all of the pelvic peritoneum. The right tube was enlarged and full of pus, and together with a cystic ovary was removed. I next drew a knot of adherent small intestine from the cul-de-sac, and after separation of two or three loops found the mass to consist of what appeared to be a greatly thickened ring of fibrous tissue surrounding the ileum and almost completely obstructing its lumen. The rest of the bowel appeared normal. Resection was done at once, an end-to-end anastomosis being made with the aid of a Murphy button. The patient, though in bad condition before the operation, showed but little reaction, and made a quick recovery. She was able to walk in two weeks, and has been remarkably free from pain since. The digestion is good, and the temperature normal most of the time. The bowels are perfectly regular, and she is free from abdominal tenderness.

The resected segment was given to Dr. J. F. Corbett for examination. His report is as follows:

The specimen consists of a piece of the ileum 5 cm. in length. At the mid part of this, internally, is a hyperplastic annular ring. Externally and opposite the mesenteric attachment is a notch in the bowel corresponding to the stricture. Aside from this the walls of the gut are not drawn in. At this notch are attached two guy-rope adhesions, but slightly organized, soft, and elastic.

The thickness of the intestinal wall varies. At a point above the stricture the average thickness is .7 cm. (Fig. 1-A) below the stricture .5 cm.; (Fig. 1-B) at the stricture from .8 cm to 1.4 cm. (Fig. 1-C) The lumen above the stricture is oval and measures 1.6 x .6 cm. Below it is round, and measures 1.6 cm in diameter. At the stricture the lumen is .3 cm. across. The stricture itself consists of a soft hyperplastic mass with no visible ulceration on the surface. This ring of hyperplastic tissue measures 1.7 cm. at the base. The valvulae conniventes distal to the stricture are thin and flat; above it they are thick and heavy. A block cut longitudinally through the hyperplastic mass at the mesenteric attachment was examined under the microscope. The following points were observed:

The peritoneal surface is not present. We come at once to a zone of fatty infiltration (Fig. 2) containing a few remains of unstriped muscle. In this fatty zone are blood vessels with thick walls. In these blood vessels is blood containing a large proportion of leucocytes. A few strands of connective tissue are also present. Next is a zone of round-celled infiltration and tubercles. Some of these consist of masses of round cells surrounding epitheloid cells with here and there a

giant cell. (Figs. 3 and 4) Others are groups of round cells only.

The giant cells are mostly of the Langerhans type, containing many nuclei around the peri-

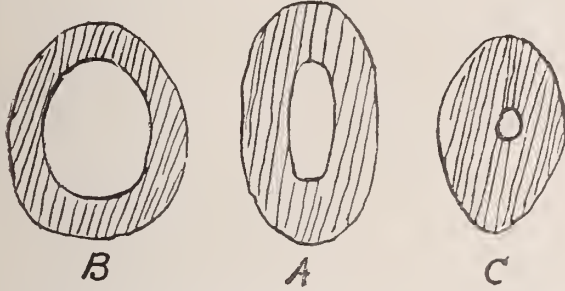


Fig. 1. Sections through bowel; B, below stricture; C, at stricture; A, above stricture.

phery. Around some of the tubercles new cell tissue is forming. No cheesy degeneration could be shown.

Above this zone lies the remains of the mucous membrane. This is infiltrated, but not ulcerated. A block of tissue taken longitudinally at the apex of the notch showed the following

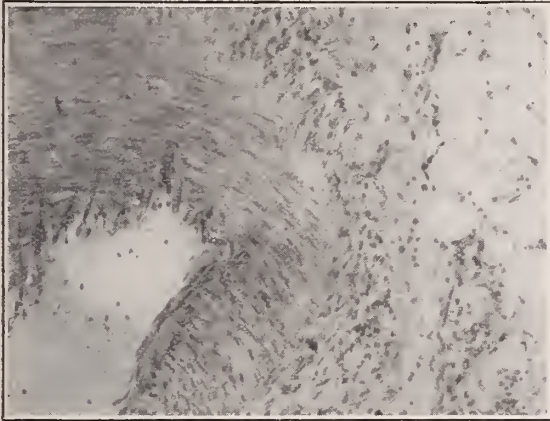


Fig. 2. Vessel wall and fatty infiltration.

arrangement: First, outside of the peritoneum a layer of partly organized fibrin; then a layer of newly formed connective tissue; and finally a round-celled mass completely replacing all other structures. The thinning of the gut and the consequent retractions are due to the scar tissue, which probably replaced a fatty infiltration corresponding to that found on the other side of the gut.

POINTS IN DIAGNOSIS

Piling up of tubercular tissue without ulceration.

Formation of connective tissue.

Finding of tubercle bacilli of the sections.

Diagnosis.—Hyperplastic intestinal tuberculosis.

There are no tubercles on the surface of the resected ovary or tube, nor any arrangement of cells to suggest tuberculosis. The ovary is cystic and fibrous. The tube contains pus, and

its walls are infiltrated with pus cells. The adhesions are composed of fibrin and newly formed blood vessels.

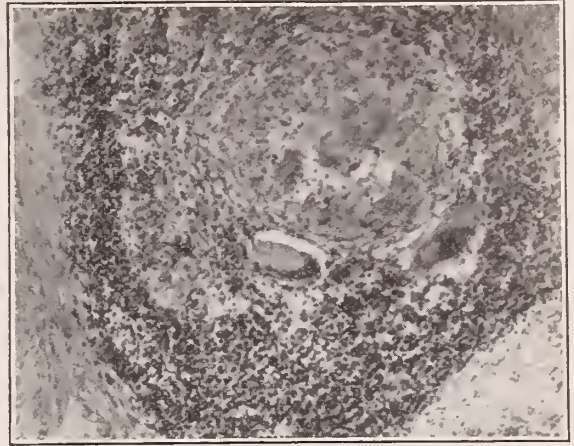


Fig. 3. Tubercle. Outer zone shows round-celled infiltration; and inner zone, epithelial cells. These become somewhat distorted in the center and form a giant cell. This is not clearly seen in the photograph. Two other giant cells are present at the juncture of the zones.

Diagnosis of Pelvic Condition.—Fibrocystic ovary, salpingitis, and subacute pelvic peritonitis.

The diagnosis was not made in this case before operation, as the symptoms were obscured by a pelvic peritonitis from another cause. Also the stenosis had not reached a degree sufficient to cause the characteristic symptoms, which must have appeared later had the case been allowed to progress.

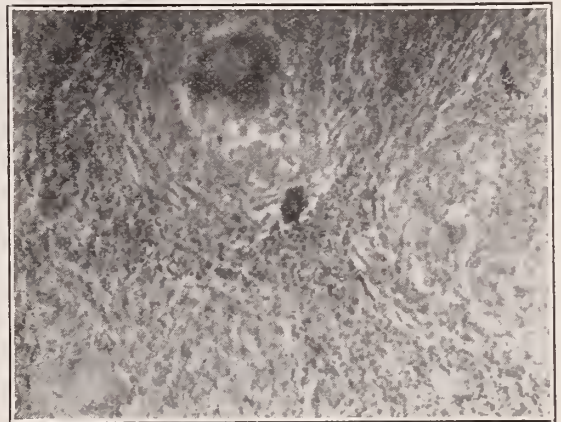
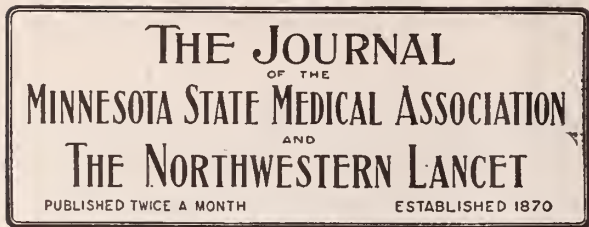


Fig. 4. Confluence of three tubercles.

The symptoms complained of before labor and up to the onset of the acute attack one month before I saw her, were probably the result of the increasing stenosis. The symptoms of the last month of her illness were due to a pelvic peritonitis. The two conditions were completely distinct from each other. I can offer no reason for the occurrence of the intestinal hemorrhage, as there was no ulceration in the mucous membrane of the segment removed.



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DIET DELUSIONS

The April number of McClure's Magazine contains an exceedingly readable and entertaining article on "Some Diet Delusions," by Dr. Woods Hutchinson, in which the various diet fancies and fads are illuminated in a forceful and common-sense manner.

Various attacks have been made on food stuffs by innumerable reformers, yet the fact remains that instinct must be far superior to reason when we consider that the average person plods through life on three square meals a day. The primitive notions about food still clings to a large class of people, and no appeal to reason can shake their belief that certain foods are poisons or that certain foods can accomplish wonders in the restoration of health. If people would take the necessary time to eat, and leave business and care from the table, adjust their minds to the enjoyment that should preside at meal-time, there would be less complaint and less of the common digestive disturbances than we hear of to-day.

Dr. Hutchinson says: "So many varied elements and substances are needed in the 'perfect diet' that an intelligent omnivorousness is our only safeguard," meaning thereby that variety is really the essence of life and that our food range should be as wide as possible. Stomachs are too

often pampered until they become discouraged by lack of exercise.

The rigid dietarian is usually a dyspeptic, and the man who thinks less of his stomach and who goes through life looking on the cheerful side is the man who can digest even the so-called breakfast foods.

Clear, wholesome, natural, and varied articles of diet should be eaten rather than those which are manufactured for special purposes. The diet cures for obesity, diabetes, or gout are very apt to upset the general balance of nutrition and impair the vitality, frequently in the long run aggravating even the symptoms of the disease which they were prescribed to cure.

Look back over the few years that have passed, and look closely at the change in the attitude of the profession and note that in your own practice you have discarded some of the fallacies in the dietetic treatment of disease. You are now treating the patient, as well as the disease. How often do you prescribe an exclusive milk diet in typhoid fever or nephritis? You depend upon the condition of the patient rather than upon the name of the disease as a guide to the dietary. Do you still believe the Scots are a great people because they are brought up on oatmeal. Or is it rather as Hutchinson says: "The most convincing proof the Scotch have given of their greatness has been their ability to live on oatmeal at all. The secret of their wonderful success, both mental and physical, lies in the fact than any nation trained to survive a diet of oatmeal and the shorter catechism, could survive anything and flourish anywhere."

The cheap and easily swallowed foods are what they seem to be, filling but not highly nutritious.

Next in order, after the patent medicines are weeded out, is to weed out the fad for breakfast-foods, and educate the people in the belief that other substances are more valuable, and that life and energy can best be sustained by a variety of foods that contain life and muscle-giving principles. The physician can do much in this line of therapy if he will study the composition of foods, but, as a matter of fact, physicians, as a rule, do not care enough about the subject to investigate it. They eat as much commonplace truck as their patients, and the majority of them do not recognize good foods when they see them. They cannot tell what combinations will agree or disagree with the patient, and, therefore, are not in a position to dictate what shall be given or what shall be discarded. It should be the aim of the medical man to adjust the digestive tract for the reception and digestion of food, and thus advise the character, combination, and preparation of such foods as are best adapted to the individual and his needs.

HENNEPIN COUNTY SOCIETY'S ANNUAL MEETING

The annual meeting and banquet of the Hennepin County Medical Society, held Monday evening, April 2nd, was ushered in and out in the usual successful manner. About 130 members and invited guests sat down at 7:30 p. m., and arose at 10:10 p. m. The speakers of the evening, Dr. N. S. Davis and Dr. Archibald Church, both of Chicago, presented interesting addresses. Dr. Davis' paper will be published in the next issue of the JOURNAL-LANCET.

Dr. Church gave an address in which he illustrated a few practical points in neurological diagnosis. He called attention to the pathological findings in hemiplegia, and discussed the frequency of cerebral hemorrhages, with the more frequent findings of an area of anemia and softening due to a thrombotic vessel. He supported the claim of vessel disease as a more common cause of hemiplegia than hemorrhage by a citation of autopsy findings in many cases. The condition of the heart and the diseased arteries, together with the prodromal symptoms, will often point to a thrombotic vessel rather than to the rupture of a vessel.

The diagnosis of cerebral hemorrhage is usually looked upon as probable in spite of the fact that in many of the cases of hemiplegia the typical symptoms are lacking. In hemiplegia due to thrombotic vessels, the patient presents a history of transitory numbness, vertigo, or paraphasia. These attacks recur at intervals until finally a gradually approaching hemiplegia develops without loss of consciousness or symptoms of an irritable cortex; that is, without convulsive attacks.

On the other hand, the hemiplegias which come in the night without ascertainable prodromal symptoms and without convulsive disorders or disturbances of consciousness, are found to be due to vessels which have become hard and inelastic and which close off certain areas in the brain. These are types, and are often associated with chronic nephritis or atheromatous vessels and diseased valves in the heart.

The real cerebral hemorrhages, which are followed by hemiplegias, may be associated with diseases in the heart and kidney, but the onset is usually sudden, consciousness is lost, and the hemiplegia is complete. If in the vicinity of the cortex, there are usually irritative symptoms.

It is not always possible to make a definite diagnosis in all cases; but that many cases of hemiplegia are due to thrombotic vessels must not be forgotten.

The remedy for the hemiplegic must depend upon the cause of the attack, and the treatment is very different in the two forms. In the throm-

botic variety anything which increases the force of the blood-stream must be avoided. The vessels must be kept pliable by absolute rest and such medicines as are supposed to soften the hardened coat. In cases of cerebral hemorrhage the force of the heart-beat may be modified by eliminative measures.

NEWS ITEMS

Dr. L. B. Remick, of St. Paul, has located at Triumph

Dr. E. A. Lupton has moved from Grand Rapids to Bovey.

Dr. T. J. Caldwell, of Chicago, has located at Wimbledon, N. D.

Dr. C. J. Watson, of Portland, Me., has located in Sauk Rapids.

The South Dakota State Association will meet in Watertown, May 22-24.

Dr. E. L. Maurer has sold his practice at Clara City, and will move to Fertile.

Dr. C. S. Houston has sold his practice at Grand Marais, and will locate at Kasson.

Dr. M. J. Farrish, of Sherburne, has gone to New York for a post-graduate course in surgery.

Dr. I. W. Livingstone, a graduate of the College of P. and S., of Chicago, has located at Wells.

Dr. Grace Gardiner-Smith has been employed as woman physician in State Training School at Red Wing.

Dr. C. A. Kelsey, who has been in practice in Minneapolis for a number of years, has moved to Boyero, Colo.

A Crookston (N. D.) paper says there is a good opening for a physician at Mentor, a new town in that state.

Dr. J. P. Freeman, of Emmons, Minn., has been doing post-graduate work in Chicago, and has located in Glenville.

Dr. J. A. Walker, of Helena, Montana, has returned from a European trip, made for study, and will locate in Butte.

Dr. J. H. Heimark has purchased the practice of Dr. Gronvold, of Gary. Dr. Gronvold will study in Germany before locating again.

Miss Maud B. Campeau, a graduate of St. Luke's Hospital, St. Paul, has taken charge, as head nurse, of the hospital at Edgeley, N. D.

The physicians of Rosebud, Custor and Dawson counties of Montana, formed the Tri-County Medical Society last month at Miles City, Montana.

Miss Segrid Linddren, formerly of the Swedish Hospital of Minneapolis, has accepted the position of matron in the Lidgerwood (N. D.) Hospital.

Dr. J. A. Carter, of Knox, N. D., has bought the practice of Dr. G. D. Murphy, of New Rockford, N. D. The latter will locate on the Pacific coast.

Three doctors of Missoula, Montana, have invented and patented a surgical table which is said to contain many improvements over any table now in use.

Dr. J. K. Moen, of Windom, will take a rest for the summer, turning his attention to land drainage. Dr. L. L. Sogge will take charge of Dr. Moen's practice.

Dr. H. W. Noth, who has been practicing a couple of years at Marine, has decided to locate in Minneapolis. He will be succeeded at Marine by Dr. G. G. Cottam.

The North Dakota State Association holds its annual meeting at Fargo, May 16 and 17. Dr. Sorkness, the president, says the attendance will be the largest in the history of the Association.

The Phi Sigma Rho fraternity of Hamline gave its annual banquet at the West Hotel, Minneapolis, on April 5th. Drs. Barton, Moore, Crafts, and other members of the faculty made addresses.

Dr. R. F. Lynch, formerly of Monticello, is now well settled in Minneapolis, with offices in the Syndicate block, in his specialty of eye, ear, nose, and throat work. Dr. Lynch spent several months in Europe before coming to Minneapolis.

Dr. J. H. James, of Mankato, desires the secretaries of county societies to send to him proper data for the report of the necrological committee of the State Association. Unless the secretaries co-operate with this committee unfortunate omissions may occur.

The Yankton District Society, of South Dakota, met at the State Hospital for Insane, at Yankton, on March 27th. Dr. Tomlinson, of the Minnesota State Hospital at St. Peter; Dr. W. A. Jones, of Minneapolis; and Dr. Dwight L.

Moore, of the N. D. Hospital, at Jamestown, N. D., were guests of the Society and read papers.

Dr. Sasse has sold his interest in the Lidgerwood (N. D.) Hospital to his partner, Dr. Shrodes. Dr. F. A. Dunsmoor, of Minneapolis, has purchased an interest in the hospital, and will go to Lidgerwood once a week to operate. Dr. T. J. Benson, who has been house physician of the Swedish Hospital, of Minneapolis, represents Dr. Dunsmoor during his absence.

The St. Louis County Society held a special meeting on March 29th to consider several important matters. A system of handling the collections of members met with no favor. The Library Committee has obtained rooms for the Society's library in the Carnegie Library building. A pathological society was formed, and classes were organized for a summer course in dog-surgery.

The Owatonna City Hospital has received a gift of \$10,000 from Wm. H. Kelly, Esq., of that city. It is a generous and timely donation, and is highly appreciated. Gifts like this, coming from citizens of moderate means, in a time of need, meet with a heartfelt appreciation from all men who are striving for the welfare of such institutions as city hospitals; and such gifts mark our progress in Christian civilization.

The Saskatchewan Medical Association was formed last month at Saskatoon, Saskatchewan. The attendance was large, and the meeting very enthusiastic. Several papers were read, a constitution was adopted, and a banquet enjoyed. The provincial government will be asked to establish a sanitarium for tubercular cases, and to enact regulations to prevent the spread of tuberculosis. Dr. J. W. Kemp, of Indian Head, was elected president, and Dr. H. Eaglesham, of Weyburn, secretary.

FOR SALE

Because of poor health I offer for sale my property and practice in Western Minnesota in a village of 400, in prosperous farming community, mostly Scandinavian. Practice pays \$5,000 a year, and goes to purchaser of my house (good house and stables, 7 acres of land, horses, cows, etc.). Price, \$4,000. For particulars address C, care of this paper.

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A FEW SUGGESTIONS IN SKIN-GRAFTING

The Result of Clinical Experience

While admitting that the Thiersch method of skin-grafting is superior to the older ones, and in some well selected cases should be employed, it is not necessary in the majority of cases to curette the entire surface, as is so often done, and cover entirely with skin grafts. If the ulcerous surface of the site on which the skin is to be grafted is rendered aseptic and antiseptic, and the granulations properly stimulated, the grafts may be applied directly upon these granulations, placing them at equal intervals over the surface, commencing from the center. This method has been followed by results as rapid and fully as satisfactory as where the entire surface had been covered. The advantages of this over the old Thiersch method are, first, the patient is not subject to the pain of having the surface prepared by scraping; second, large quantities of skin are not necessary which are usually hard to obtain; third, the result obtained is fully as satisfactory and as rapid.

Briefly stated, this improved technic is carried out as follows: The surface onto which the skin is to be grafted is cleansed by irrigation with Thiersch's solution and then dressed for from twenty-four to forty-eight hours with a wet Thiersch pack. At the end of this time it is dressed with Bovinine, pure, and on the fourth or fifth day it is usually ready for the graft. Small grafts, about the size of a split pea, are deposited at regular intervals, placing the first one in the center, or at the point farthest from the periphery, and then at regular intervals radiating from this central graft. Over this, plain sterilized gauze is applied and held gently but firmly in position by one or two rolls of a sterilized gauze bandage. This dressing is kept constantly wet with pure Bovinine. At the end of six

or seven days it is removed and experience proves that these grafts become firmly adherent by this time and under the continued Bovinine dressing rapidly cover the entire surface. If the patient to be treated is anaemic or debilitated, Bovinine is given internally, commencing with small doses and gradually increasing to the maximum.

antacid, while chronic cases with cachexia find the lime salt act as a tonic nutrient.

The sulphocarbolates are very soluble, and hence are most useful. Assimilation soon begins to improve, and the microscope fails to find bacteria in the stools. Absorption occurs, not of poisons, but of properly digested food. Opiates and anodynes in such cases only lessen the pain and do not do away with the poisoning.

INTESTINAL ANTISEPSIS: ITS THEORY AND APPLICATION

The Medical Record of Oct. 21, 1905, under the above caption, and digesting from the Alkaloidal Clinic, says: Dr. W. C. Abbott claims for intestinal asepis the reduction of the number and potency of the pathogenic bacteria in the intestine by the use of appropriate remedies, not the rendering of the canal entirely aseptic, a thing that is manifestly impossible. The debris of ingested food becomes, in deranged conditions of health, a nidus for the growth of germs. In most acute diseases food is not assimilated, the body chemistry is deranged, and the intestine becomes full of fermenting material ready for the growth of germs. Poisons are absorbed along the course of the intestine, and produce their toxic effects. Constipation causes this fermenting mass to remain in the bowels, or a part is rejected, leaving plenty behind in the folds and pockets of the intestine.

The first thing to be done to render the intestine less septic is to remove as much as possible of the contained materia, by the use of moderate doses of calomel. This at the same time stimulates the intestine and the liver, and causes the peristaltic action of the bowel to be encouraged. A saline is then given, causing an excess of serum to be poured out, and the stomach and intestine are made clean for the action of the sulphocarbolates, which are inimical to all germs, while at the same time not harmful to the most delicate membranes. Those used are the sulphocarbolates of zinc, lime and soda, separately, or in combination. Under their use hyperpyrexia lessens, tympanites and foul tongue pass away.

Digestive and febrile diseases of all kinds should be treated in this way. The sulphocarbolate of zinc may be given one grain, repeated every half hour to two hours, gradually increasing to five grains at each dose. Even two drachms in twenty-four hours may be taken without harm. When they have had the desired effect the stools are no longer black from bismuth combined with the sulphocarbolate, but take on a gray and then a normal brown color. The zinc is more astringent and antiseptic, the soda more

PNEUMONIA

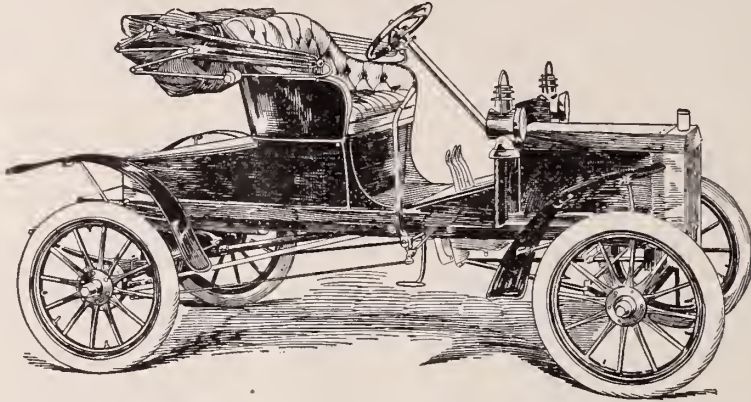
"The pneumonia season is rapidly approaching. Soon the various journals will be full of the statistics of past years in regard to the prevalence and fatality of this disease. The pathology and etiology will be thoroughly gone over, but, judging by the past, most writers will have very little that is encouraging to say as regards treatment.

"Several points, nevertheless, must be kept in mind. Whatever drugs are used internally (and this depends very much upon the individual case), the patient must have plenty of fresh air. Do not be afraid of his taking cold on account of the cold air blowing across his face. It is now considered that this is impossible. Also, whatever drugs may be used, keep the body warm with suitable clothing, and use externally some preparation which will cause a comparative lessening of blood-pressure in the lungs. Cold applications, beside lowering the vitality of the patient, cause a depletion of the superficial vessels and consequently increase the hyperemia in the lungs themselves. Our attention then would be drawn, per contra, to hot applications. To the most of these there are very great practical objections, such as their inconvenience, their tendency to grow cold very rapidly, and the fact that they must frequently be renewed, thereby disturbing the patient's rest and his manifest derangement.

"We have found but one form of hot application which seems to us to entirely fill the bill, and that is antiphlogistine. By its means the vitality of the body is conserved, the blood is attracted to the surface and away from the lungs (its hygroscopic action remarkably enhancing this effect), and the tone of the heart's action is maintained. Beside this, its frequent renewal is not necessary, and the patient's rest is not thereby disturbed. Practically we know that by its use the patient is made much more comfortable, the fatality is much decreased, and if abortion of the disease is possible, we believe it can be accomplished better by this means than by any other."

—Kansas City Medical Record, October, 1905.

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THE SIGNIFICANCE OF URINARY ANALYSIS IN NEPHRITIS*

BY N. S. DAVIS, A.M., M.D.

Professor of Principles and Practice of Medicine in Northwestern University and Dean of the Medical Faculty;
Physician to Mercy and Wesley Hospitals, etc.

CHICAGO

I wish to thank you for this opportunity to speak to you. It is an honor which, I assure you, I appreciate most highly.

I have chosen as a subject "The significance of the results of urinalysis in nephritis," because I hope that it will interest many of you and lead to conclusions of practical value.

At the end of the 18th century and during the first years of the 19th Cullen's "Practice of Physic" was the authority by which English-speaking physicians were guided. In this work two pages are devoted to a chapter entitled "Nephritis." However, the symptoms described are those of renal colic rather than of what we call nephritis. Not until 1827 did Bright describe, for the first time, the diseases which bear his name and which are also known as forms of nephritis. So recent is our knowledge of these disorders. To be sure, three-quarters of a century earlier Cotugno showed that a coagulable substance occurred in the urine of certain dropsical patients, and seven years before Bright wrote his memorable description of diseases of the kidneys Blackhall pointed to the coincident occurrence of albuminuria, dropsy, and renal lesions, but he did not, as did Bright, ascribe the former symptoms to the latter lesion.

It is astonishing that all that is now known of diseases of the kidneys has been acquired in the last seventy-five years, but it is not surprising that much has been left to be learned. For

many years the authors of text-books and monographs have with very great unanimity classified cases of nephritis as acute, as chronic parenchymatous, and as chronic interstitial. It was admitted that the second group could be subdivided into a type form, into a secondary contracted kidney, and into amyloid degeneration, sometimes associated with nephritis. Passive congestion of the kidneys and acute degeneration or cloudy swelling are two lesions which have long been recognized as having many symptoms in common with nephritis.

Most writers upon these diseases have drawn a clinical picture of each so sharp in its outline that a mistake in identification would seem impossible. Chief reliance was placed upon the characteristics of the urine and its sediment. According to many accepted descriptions these and circulatory changes made a diagnosis possible.

During the last 15 or more years I have frequently called attention to the impossibility of always differentiating these diseases. I do not mean that I have been alone in this, although at first there were few others who openly voiced the same views. In the last year the results of two very interesting studies, have been printed. Many of you, I doubt not, are familiar with them, and I shall only, as briefly as possible, call attention to their conclusions. The first is by Richard Cabot. To determine what the exact relationship of renal diseases and urinary findings was he gathered the records

*Read at the Annual Meeting of the Hennepin County Medical Society, April 2, 1906.

of all such cases which during the preceding twelve years had come to autopsy in the Massachusetts General Hospital. The autopsies were made by Dr. J. H. Wright, and the lesions in each case were studied microscopically as well as macroscopically. Knowing, therefore, the exact pathological condition in each case Cabot studied the recorded urinalyses made before death to ascertain whether they corresponded with the types of text-book and monograph.

Of 21 cases of acute nephritis none were recognized as such during life. Five were called nephritis, 3 chronic parenchymatous nephritis, and 1 chronic interstitial. In 75 per cent of the cases a diagnosis even of nephritis was not made during life. The high grade of clinical work done in the Boston hospitals makes it impossible to suspect careless or superficial antemortem study of these cases. Moreover, Cabot says that the history of the cases and urinalyses would not enable anyone to recognize them.

Of 10 cases of subacute glomerular nephritis 5 were called nephritis. Of these 1 was called acute nephritis; 1 chronic glomerular nephritis; 1 interstitial nephritis; and in 2 the type was not specified. The 5 unrecognized were indexed gallstones, actinomycosis, sloughing uterine fibroid, acute endocarditis, and pneumonia with alcoholism. These latter conditions undoubtedly existed, and nephritis complicated them. In all these cases there were albuminuria and cylindruria. However, the amount of albumin varied from the slightest trace to one per cent and the kinds and number of casts varied equally.

Of 17 cases of chronic glomerular nephritis, 13 were correctly identified before death; 2 were indexed as nephritis; 1 as interstitial nephritis; and 1, in which there was eighth per cent of albumin and occasional granular casts with adherent cells, was not named. The variable and often atypical urinary findings in these cases doubtless had less to do with the recognition of them than the chronicity of the disease, the aspect of the patient, the persistent edema, and frequently uremic manifestations.

Out of 35 cases classified at autopsy as chronic interstitial nephritis, 19, or about one-half, were recognized as nephritis of some type, and of these there were 5 in which the full title *chronic interstitial nephritis* appears in the antemortem record. The majority of those called nephritis were regarded before death as chronic glomerular. Of the cases not recognized clinically 4 were described by the pathologist as slight, and in 3 more the lesion was unilateral, with a hypertrophied kidney upon the other side. Omitting these 7 cases from the count, the lesion was successfully recognized before death in 18 per cent of the cases.

I will not weary you by quoting the evidence equally unsatisfactory as to our ability to recognize amyloid kidney, passive congestion and acute degeneration.

Cabot also described 10 cases with urinary findings, and other symptoms of nephritis in which at autopsy nephritis was not demonstrable. More recently a somewhat similar study has been made by C. P. Emerson of cases at Johns Hopkins Hospital which likewise shows that urinary findings are not typical of the pathological forms of nephritis. For instance, in acute glomerular nephritis the quantity of urine was usually found diminished, but sometimes normal or increased. The specific gravity varied from 1015 to 1025. Albumin was usually present, but less than one per cent; rarely it was entirely absent or only occasionally present. Red-blood corpuscles were present, also mononuclear leucocytes and a few polynuclear ones and epithelial cells. Casts of all kinds were found, but in varying quantities and combinations.

In subacute nephritis the urine showed almost the same conditions. Albumin was always present, rarely in traces, usually in abundance.

In chronic non-indurative nephritis there was much edema in about 50 per cent of the cases. In 80 per cent of these, and in 44 per cent of those with no edema, the quantity of urine voided and the specific gravity were normal. Albumin was abundant; and casts were numerous and of all kinds. In the sediment there were also renal epithelial cells, red-blood corpuscles, and leucocytes.

In the cases of interstitial nephritis the quantity of urine voided and the specific gravity were, as a rule, normal. However, when the kidneys were greatly contracted the quantity increased and the specific gravity fell. As a rule albumin was present in traces, at least intermittently, although it was sometimes absent. Sediment was small in amount and contained, with few exceptions, hyalin and granular casts and very rarely fat casts.

You will have noticed that in the cases of interstitial nephritis there is least variation from the conditions usually described as typical.

I have abstracted the articles of Cabot and Emerson because the statistics in them are from two hospitals in which the accuracy of the pathological and clinical work done is not doubted:—

We are, I believe, forced to these conclusions:

1. That a pathological diagnosis is impossible in many cases of nephritis.
2. That in making a diagnosis, cause for the lesion, the condition of the blood and blood vessels and nutrition, and the existence of edema and of uremic manifestations, and not changes in the urine, are of the most importance.

We must cease to think of the urine as typical, at least in a large number of cases. Chronic interstitial nephritis can often be recognized because changes in blood vessels and in heart have been long regarded as of more importance than albumin and casts. Chronic glomerular nephritis is detected with equal or somewhat greater frequency because of its chronicity, persistent dropsy, and effect upon nutrition and blood, as well as because of the presence of albumin and casts, usually in abundance.

A group of cases, frequently seen and frequently incorrectly diagnosed, constitutes, I believe, a variety of chronic diffuse nephritis. When first seen these patients look well, are not dropsical, exhibit no signs of arteriosclerosis or cardiac hypertrophy, and their urine is clear and almost free of sediment and is normal in amount and specific gravity, but contains a large amount of albumin. By centrifugation a few hyalin and granular casts are demonstrable, and very few cells of any kind. The chronicity of the disease necessitates the diagnosis of a chronic renal lesion. The abundance of albumin means that innumerable glomeruli are incompetent, which is characteristic of parenchymatous nephritis. Moreover, in some of the cases a little edema will develop at times, and in most of those which I have watched there developed, after months and sometimes after two or more years, evidences of secondary contracted kidney. Such evidences were increased frequency of urination at night, lower specific gravity, larger quantity of urine, hypertrophy of heart, high arterial tension, and more frequent evidences of uremia. In this stage, if it were not for the copious albuminuria, a diagnosis of interstitial nephritis would surely be made.

Acute nephritis remains unrecognized in a large majority of cases, because we have not learned to attach sufficient weight to the existence of a cause for it and to the significance, when there was a cause, of traces of albumin and casts or even their occasion presence.

Although urine in various forms of nephritis is often atypical, it is sometimes quite typical, and is then the greatest help to a diagnosis. Therefore we are not justified in saying that the urine never can lead us to identify a renal lesion. But the typical changes are so well known that I will not dwell upon them.

If a cause for nephritis exists, some evidence of it should be as persistently sought as we listen for cardiac murmurs in acute articular rheumatism. And just as impurities in the sounds of the heart, or irregularity in it, lead to a diagnosis of endocarditis before more positive evidences are detectable, so, for example, in scarlet fever traces of albumin or cylindruria without albumin, or slight dropsy without either, must be regarded as evidence of nephritis. A diagnosis

can be made upon the same symptoms in septice-mia. But, although nephritis at times complicates every infection, it is as rare in certain kinds as it is common in others. For instance, in typhoid fever small quantities of albumin, a few casts and a few cells of various kinds indicate cloudy swelling or acute degeneration, and not nephritis. If, however, these symptoms develop or persist after convalescence, nephritis undoubtedly is present.

Let me illustrate once more the value of causative conditions in leading to a diagnosis. About a year ago I attended a young woman who was pregnant. Two months before time for delivery she developed an extensive general edema, but her urine was normal in amount and specific gravity. Moreover, it contained neither albumin, casts, blood, nor renal epithelium. Careful dieting and the exclusion of salt from her food caused the dropsy almost to disappear, but when the diet was made somewhat less rigid it again increased. For eight weeks there was no evidence of nephritis in the urine; but suddenly she developed symptoms of eclampsia and simultaneously the urine was almost suppressed, but what there was of it was loaded with albumin, casts of all kinds, blood corpuscles, and epithelial cells. I cannot help believing that nephritis had existed for two months, and was cause of the edema which so long had been as noticeable in her face, arms, and body as in her legs.

Particularly in acute nephritis will a cause for it help to a diagnosis. Slight infections, such as trivial sore throat or la grippe, must be sought to account for and to identify certain cases. But, I doubt not, we all recall cases which it was impossible to classify, or of which we could only say that they were nephritis or perhaps chronic nephritis.

What definite conclusions then can we draw from an examination of the urine?

1. Albumin and casts are always significant of defective kidneys. The defect may be functional or anatomical, or both. But the converse of these is not true, for nephritis may exist when the urine is normal. A large quantity of albumin in urine means that many glomeruli are simultaneously incompetent and are leaking serum. But the converse of this is not always true; i.e., that small quantities mean that few glomeruli are at the time incompetent, yet it is true when applied to interstitial nephritis, for, although in kidneys affected by this lesion many glomeruli are actually destroyed and completely impervious, the disease progresses by the involvement of one microscopic area after the other, therefore few glomeruli are at one time leaking albuminous fluid, and, consequently, albumin is found in the urine only in traces. However, sometimes, when the lesion spreads rapidly or when an acute exacerbation

occurs, the quantity of albumin may be increased.

But in many cases of acute and chronic glomerular nephritis in which the glomeruli are almost uniformly involved, albumin may be excreted in traces or not at all.

2. Red-blood corpuscles in more than very small numbers indicate an actively developing lesion, and therefore either an acute one or an exacerbation in a chronic one. However, again, the converse of this statement is not true, for red-blood corpuscles may be wanting in the urine from kidneys which are acutely inflamed.

3. A large amount of sediment made up chiefly of casts indicates an extensive involvement of the renal epithelium in pathological changes. The same conclusion is justified when the sediment is large in amount and contains a large proportion of renal epithelium.

It has frequently been said that fat casts and fat in urine and renal epithelial cells are characteristic of chronic non-indurative nephritis because fatty degeneration of renal epithelium is an essential part of its lesion. However, this is not always true, for fat and fat casts are sometimes found in urine of all forms of nephritis. The presence of fat granules and droplets in large numbers, in and out of casts and cells, I find indicates an intensely severe lesion, and especially when it accompanies an acutely developed lesion often indicates one which quickly proves fatal. The same conclusion, I believe, is justified when we see an abundant sediment filled with coarse and fine granular casts of a deep yellow or brown color, providing there is not a general jaundice, and bile is not detectable in the urine.

It is much more difficult to estimate the meaning of a few casts. Hyaline and finely granular ones I often see accompanying chronic constipation and acute and chronic digestive disorders. They promptly disappear when putrefaction and abnormal fermentation in the gastro-intestinal canal is stopped. If, however, they persist or constantly recur when digestion is good and when the stomach is not overtaxed they often give a warning of approaching indurative nephritis.

Severe physical exertion also will cause this temporary appearance of casts in the urine.

Almost invariably if casts are found frequently in urine, albumin will be discovered to exist at least as a trace from time to time.

4. The best evidence which we have of the competence of kidneys to perform their work is by estimating from the specific gravity of the urine the total solids voided in twenty-four hours. Such new methods of determination as cryoscopy and electrical conductivity afford no better information. However, renal epithelium exhibits a capriciousness in its ability to eliminate, which is not generally appreciated; for instance,

urea may be voided copiously, and chlorides may be retained; or both may be eliminated imperfectly, and methylene blue, which has sometimes been used as a test of competence, may escape freely or the converse may be true. For this and other even better reasons methylene blue is of little use as a test.

Moreover, too much weight has been attached to the elimination of urea as a measure of renal activity. It is only a measure of one kind of activity. We have assumed that its elimination was also proof of the excretion of toxins, but uremia has been seen to develop suddenly in patients when there was nitrogenous equilibrium and when an excess of nitrogenous matter was voided, as well as when a diminished quantity was excreted.

5. The relative amount of ammonia voided as compared to urea or total nitrogenous matter, is sometimes of use in roughly gauging the functional activity of the liver, for it is in this organ chiefly that the ammonium compounds in the blood are transformed into urea. Therefore we can conclude that if ammonia is eliminated in excess and urea in lessened amount, the liver, rather than the kidneys, is inactive. But it must be remembered, that if there is an excess of acid in the blood it may form compounds with ammonia which will effect the same result. This relationship of ammonia to urea exists commonly in uremia and often is a warning of its approach.

6. The importance of knowing how freely chlorides are eliminated was pointed out by Widal in 1903, and has been confirmed by many others since. It is undoubtedly true that sodium chloride accumulating in the tissues plays a part in causing edema, and possibly, as Widal asserts, is its only cause. Commonly, when edema is great, chlorides are deficient in the urine.

To illustrate, in one of my own cases, with abundant edema and some uremia, there was an excretion of 1.5 per cent (estimated by centrifugation) of chlorides, which steadily rose to a normal 6 or 8 per cent when edema was gone. The urine at the same time increased from 540 cc. in 24 hours to from 1500 to 2000. The fact of a relationship between chloride retention and edema has been confirmed by observations made in all lands and by most trustworthy clinicians. The retention is greatest in severe cases, in uremic cases and in edematous ones. That an excess of common salt will increase edema, albuminuria, and other symptoms of an aggravated nephritis has been demonstrated. Therefore, in order to prevent such results as well as to hasten the absorption of edema, the diet of nephritics should contain not more of common salt than is needed for the maintenance of health, which is estimated

at approximately 2 grammes daily or about what is in 1½ quarts of milk.

7. The recognition of the presence of indican or of combined sulphates in large quantities is important, because they indicate much decomposition of proteids in the intestines and the production of substances which are abnormal to the human body and which, when eliminated by liver or kidneys, may injure them, or at least tax their functional powers. They indicate an intestinal indigestion which must be corrected, especially when there is nephritis because it so often provokes uremia.

I am constantly surprised to find fellow practitioners carefully estimating the nitrogenous output of patients, or even estimating the other ingredients of urine and attaching much importance to the results without taking into consideration what food or how much the patient has eaten. It is evident that this last information must always be sought, if an accurate idea of the functional power of the kidneys is to be formed by a quantitative analysis of urine.

Since it will lead us to study with more care the complete pictures of the various forms of Bright's disease, it is best to admit to ourselves that a diagnosis of nephritis is sometimes impos-

sible, and often so if we depend chiefly upon urinalysis. Moreover, although we must admit that in these diseases the urine frequently does not correspond to a type as has generally been believed, we are not justified in becoming pessimistic and in asserting that careful chemical and microscopic study of urine is needless. It does give us most important information as to the functional activities of the kidneys, a kind of knowledge which is essential from the viewpoints of prognosis and treatment and often of diagnosis.

To make a pathological diagnosis more frequently possible, more detailed studies of renal lesions arising from known causes, as from infections, are needed, as is also a knowledge of the urinary findings in these same cases. There are very few of these simultaneous clinic and pathologic studies.

Although the classification of cases of nephritis which I have mentioned is the one generally adopted, I doubt not those of you who have been studying nephritis with care, feel as I do, that there is something yet to learn of the pathologic anatomy of these diseases and especially of the relationship of causes to histologic and physiologic changes.

COMMON SOURCES OF ERROR IN THE DIAGNOSIS OF HEART LESIONS*

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ST. PAUL

The theoretic simplicity of the diagnosis of cardiac lesions is by no means exemplified in practical work. Error is frequent, and is often wholly justifiable or excusable, for its sources are manifold and too little discussed by both teachers and writers.

Mistakes may be placed under three heads:

1. *Misinterpretation of signs apparently frank and definite.*
2. *A failure to recognize lesions because of the absence of murmurs or pronounced secondary cardiac signs.*
3. *Faulty conclusions based upon the mere presence of a murmur.*

A full discussion of these topics is manifestly impossible in the short time at my disposal. Early recognition and appropriate treatment of heart lesions is almost as important as in tuberculosis, and it is surprising that so many victims

of valvular disease and chronic myocarditis are allowed to go on year after year without the proper oversight and direction so necessary to the prolongation of their lives.

There can be but one result if patients are permitted to go on without check or direction, and that is reduced an after-life time far below what might be obtained.

Diagnosis may fail from absence of murmurs in the case of any valvular lesion, coronary sclerosis, chronic myocarditis, or even aortic aneurism. Yet in nearly all of these modification in or absence of, one or more heart sounds may be detected, and in the valvular lesions the murmur is seldom absent for long periods or on successive days, and it may be developed by simple maneuvers. Not infrequently its apparent absence is due to faulty technic. Too firm stethoscopic pressure diminishes or completely obliterates the murmurs of mitral and tricuspid stenosis and the hemic murmurs, while

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intensifying those of mitral, aortic, and tricuspid regurgitation.

The attitude of the patient may be all important in many cases. How often one finds the murmur of mitral stenosis and aortic regurgitation absent when the patient is recumbent, and present when the sitting or standing posture is assumed. Aortic regurgitation is, moreover, often absent until the arms are raised above the head, or the patient is put through some exercise involving a moderate amount of physical exertion. Curiously enough, the opposite condition may obtain, and a mitral regurgitation is most frequently heard best in recumbency. Exceptions are frequent, and no hard and fast rule can be established, but we should remember that *no examination of the heart is complete unless the suspect is examined in both the erect and recumbent postures.*

Another means of bringing out a murmur is found in the enforcement of absolute rest and the administration of heart stimulants. This is particularly true of certain cases of chronic myocarditis lacking a murmur yet having a bad heart.

As regards the fallacies pertaining to individual murmurs we may speak of—

Mitral Systolic Murmurs.—The murmurs may be wholly absent or absent at the apex and clearly audible under the scapula. A systolic murmur in the mitral area may be hemic or purely temporary and accidental; but in *true regurgitation*, with or without murmur, the first sound is never normal. It is invariably impure, muffled, or wholly absent, and an accentuated pulmonary sound is present unless the right heart has yielded to strain.

Mitral Stenosis.—The murmur is often absent, but a peculiar and characteristic first sound, sharp, loud and slamming, is *seldom* lacking, unless marked insufficiency of the mitral co-exists, and is peculiar to this lesion.

Diagnosis by the palpation of a presystolic thrill may be present when no murmur can be heard. In the presence of aortic regurgitation a presystolic murmur (Flint's murmur) may not be due to stenosis. The second pulmonary is often doubled in this lesion.

Aortic Stenosis.—Most of the systolic murmurs in the aortic area are false murmurs due to atheroma of the aorta. One should demand a diminished second aortic sound and the characteristic pulse before making a positive diagnosis.

Aortic Regurgitation.—This murmur is frequently temporarily absent or extremely faint. This lesion is pre-eminently one of secondary signs, and a correct diagnosis may and should be made in the absence of a murmur by a study of the cardiac outline, absent or markedly dimin-

ished second sound in the carotids, throbbing of peripheral vessels, the capillary pulse, and the pistol-shot sound in the femorals.

In a case examined at a clinic held a few days ago the murmur was at times wholly absent, the Corrigan pulse imperfectly developed, yet the pistol-shot sound was wonderfully loud and sharp and capillary pulsation marked.

Difficulties may be greatly increased by complicating lesions, and in such cases accurate diagnosis is sometimes impossible.

As regard other lesions of the heart muscles or valves the chief factors in correct diagnosis are an accurate knowledge of the character and accentuation of normal sounds, the determination of cardiac outline, and the intelligent appreciation of remote secondary effects and the vagaries of angina pectoris.

Some of the worst cases and certainly the most neglected are those of chronic myocarditis, perhaps showing no murmur or only developing one under rest and cardiac stimulation. Many of these wholly depart from the text-book description, and the same may be said of *aneurism*.

Since I have begun to use the *x-ray* as a routine diagnostic procedure I have found that not more than twenty per cent show the classical signs, and cases have died of rupture that lacked nearly all of the book symptoms.

The spurious murmurs cannot be adequately discussed in so brief a paper. They are associated with anemia, hysteria, neurasthenia, over-use of tobacco, sexual excesses, chronic malnutrition, emotional states, and lesions of the lung and pleura.

The recognition of accidental murmurs must depend upon the weighing and balancing of probabilities. Most of them occur in the pulmonary area, and pulmonary systolic murmurs of the organic sort are so rare and so generally congenital that the site of the murmurs at once places it in the accidental column.

Diastolic murmurs, aside from those of pleural and pericardial origin, are, with the rarest exceptions, due to valvular disease, and the same may be said of presystolic murmurs.

Absence of a history of rheumatism, syphilis, and other well-known factors in the etiology of endocarditis may be helpful.

The presence of emotional states of hysteria or neurasthenia, the excessive use of tobacco, or sexual excess suggests a functional or purely temporary phenomenon.

Accidental murmurs are rarely attended by marked changes in the accentuation of the heart sounds, and usually lack the characteristic secondary changes of cardiac outline. Many are markedly affected by deep breathing.

Too much stress should not be laid upon the

former statement, for in the earlier stages of true endocardial lesions little change in the cardiac outline may be noticeable. I have been fortunate enough to observe the gradual development of an aortic regurgitation during a period of two years following a monarticular rheumatism so mild as not to confine the patient to the bed or house or to necessitate the use of a cane. The murmur is clearly audible, the pulse is true Corrigan, the capillary pulse easily demonstrable, yet the cardiac outline is not markedly altered. The development of the lesion was coincident with the appearance of typical facies and a marked neurasthenia.

Collective experience fully proves that organic lesions may exist for a lifetime without recognition and without cardiac changes sufficiently grave to bring on severe incompensation.

A heart murmur certainly has less significance than formerly, and an absence of heart murmur less of the quality of re-assurance.

Knowledge of normal sounds, familiarity with secondary symptoms, a proper weighing of prognostic values, and control of the individual case are absolutely necessary to correct diagnosis and treatment.

DISCUSSION

DR. A. W. STINCHFIELD (Rochester). I was notified some time ago that I was expected to talk a little upon this paper. I feel more unwilling to discuss the paper since hearing it, because it covers a large field of heart troubles, and what I may say will be on general principles.

One thing occurs to me of which I wish to speak. When called in consultation to see patients, as we are very likely to be, in old cases when the compensation has been lost—and it has been my lot to be called in some cases where I could find no heart murmur, although the physician in attendance said the murmur

had been pronounced, but as extreme weakness came on, there was, of course, no murmur, and that would be a great source of error. If the consulting physician does not set it right his diagnosis will not be very well defined.

Another point that occurs to me in seeing patients that perhaps we might call diagnosis. The doctor's suggestion about the importance of understanding the various features of the heart is something that ought to be impressed upon us, for there are certain classical signs that we must unlearn. It is quite easy to learn rules the same as it used to be in learning the rules of Latin grammar. I could soon go through the rules of syntax, but when we came to the exceptions that was quite a different proposition; and afterwards in the lesson the rules would bob up familiarly, while the exceptions slipped away, and this applies to us in being prepared to make the most of what we know in making diagnosis of heart diseases.

However, I will get back to my text. A patient came to my office one evening some years ago when I was weary with my day's work. I gave him an examination, and told him to come in at 9 o'clock in the morning. He was reasonably fresh from his night's rest, and I was reasonably fresh. I gave some time to making the diagnosis. He told me he had his physician in waiting outside, and would like to have him come in. He called in his physician, and then he began to question me about my diagnosis, and it came out that he had a very choice variety of diagnoses from certain specialists and celebrated teachers, and what might seem strange at first sight, and what seemed strange to me, was the fact that no two of them agreed, yet his symptoms seemed very plain to me as they evidently had been to those to whom he had gone before. Two physicians in one city were celebrated teachers, and their diagnosis and consequent prognosis and treatment were almost opposite. One, as a matter of fact, told him it was possible for him to get entirely well, and the other one told him that the only thing for him to do was to prepare for heaven. So we must conclude that however well prepared we may be to judge of these cases, sometimes we shall not agree better than twelve jurymen when they have heard the same evidence exactly, and have had the same aid in clearing up knotty points, yet they fail to agree, and their opinions are often diametrically opposite.

ON THE BEST FORM OF INCISION IN THE EXTRACTION OF CATARACT*

BY CORNELIUS WILLIAMS, M. D.

ST. PAUL

There is one paramount consideration in the operation for cataract—the visual result. The first step towards the accomplishment of that result is the laying of the corneal incision. Many have been the methods employed, but the limits of this paper permit me only to speak of the method which commends itself to me as being safer than any other that I have seen tried, and the only one which I myself have attempted. My experience in the extraction of cataract is limited to some five hundred cases, which I

have seen operated upon by other surgeons, and about one hundred of my own.

In these one hundred cases I have always laid the incision in the transparent cornea, except as to the entrance and exit of the knife, endeavoring always to secure an incision which should be large enough, and very rarely using the scissors to enlarge it, but never hesitating so to do when I found it needful. In every case but one the incision was made upwards. In that one an iridectomy had been made downwards some years before. Although I have had some very unruly patients, I have had loss

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of vitreous in only 3 per cent of the cases, and never extensive loss. I have had a total loss of one eye, with unsatisfactory vision in one, with closure of the pupil in one, but with good light perception, further operation being refused. The lost eye was in the case of a woman of 77 years, operated upon in a distant city, who had only partly recovered from a fractured limb. (I did not know of it at the time of operation.) The extraction was made downward. The lens in capsule was delivered without accident, corneal incision enlarged with scissors. The patient read the time by my watch immediately after the operation, and everything went well until fifty-two hours afterwards, when the patient made an attempt to rise in bed quickly. She felt a sharp pain in the eye, and when I came a few minutes afterwards I found the right lower angle gaping and a long string of vitreous extruded. Infection followed with threatened panophthalmitis. Enucleation was performed under ether, from which she never rallied.

The unsatisfactory result mentioned was a patient operated upon under difficulties, who could not be made to refrain from scratching his eye. He lived in a fourth-class hotel, and in those days trained nurses were unknown. The patient went home with V. 20-50, and without discussion, and returned some months later with an iritis from the blow of a twig, remained a couple of weeks, and becoming very excusably dissatisfied with the want of attention at the hospital, left for his home without warning.

The second similar case was that of a man who acquired an atropine delirium, injured his eye, got an iritis, which later resulted in closure of the pupil, and declined further operation.

Of a little more than the hundred cases, a number of them were operated upon under disadvantageous conditions, some of them in boarding houses and cheap hotels, with poor conveniences and without the precautions as to asepsis which characterizes all operations to-day. Many of these patients did not return for the second operation, and only about one-third were simple extractions. The fact that there were so few accidents and unfavorable results under adverse conditions is a matter of some surprise to me now. The detailed record of some of the cases I have not at hand, but the summary is correct. The ages of the patients run between 36 and 84 years.

The great advantage of the wholly corneal incision is its greater safety.

The canal of exit of the lens corresponds to the long axis of the eye. The pressure exerted by the spatula is communicated to the vitreous and is equal in every direction except at the point of application of the force. The tendency is to

tip the lens upward and forward. This rotation is the most favorable to the expulsion of the lens, because all the forces operating within the eye are directed to the one end. The sum of the forces required to the expulsion of the lens is less than for any other form of corneal incision. The danger of prolapse of vitreous or of the iris is much lessened, because the force applied is less. Engagement of the iris in the lips of the wound is counteracted by the natural elasticity of that membrane, which brings it back into position, offering every assistance to reduction on the part of the operator. Gaping of the wound is reduced to the minimum, for the pressure of the lids is addressed equally and circumferentially, closing the lips of the wound accurately. Infection organisms do not enter the wound readily, and the anterior chamber remains sealed, because of the close adaptation of the lips of the wound. The astigmatism consequent upon the corneal cut is less in this form of incision than in any other, because the corneal arch is weakened to a lesser degree than in any other form of more peripheral incision. The flattening of the cornea is resisted, because the jambs of the arch are intact and prevent over-riding at the place of section. The scar is not visible, nor does it cut the visual line, being covered entirely by the lid. The two last cases operated upon by me seem to demonstrate the value of incision within the clear cornea in a most notable way.

Mrs. A., aged 36; of the third generation to suffer from cataract (both eyes); very thin of flesh at time of operation, with deep-set eyes, the orbital fat having disappeared to a remarkable degree; a very intelligent woman, yet the embodiment of the most ingenious pessimism, a deep-rooted fear of permanent blindness; and withal excessively nervous, given to tears at a word's notice, and at the time of operation keyed up to a very high pitch. Simple extraction at 2 p. m., anterior chamber washed clear of all lens detritus, wound lips perfectly adapted, pupil round. Cocaine and adrenaline, eserine before the bandage. During the night the patient had codeia, and later an hypodermic of morphia for pain, referred in part to the eye, in part to the stomach. She retched and vomited bile every few minutes during the entire night. At my morning visit I expected to find at least prolapse of iris. The pad was not even moist; the lips of the wound were united; anterior chamber normal. This patient had, ten days later, a minute point of iritis where the iris had been touched by the knife. She made an uninterrupted recovery, vision 20-20, without discussion, and has an astigmatism of 0.75, ax. 150.

John Anderson, aged 77; very great hypertrophy of conjunctiva of lower lids only; secre-

tion reduced by some weeks' treatment of silver nitrate; no dangerous microorganism found after repeated bacteriological examination, but very shallow anterior chamber t. n. f. c. The patient is a Swede, a large-framed, fleshy man, who promised to behave, but when I drew out the iris he suddenly drew his head to one side, causing divulsion of the iris, not only at its superior attachment, but also at the lower and inner part as well. The eye immediately filled with blood. The patient after that was intolerant of any manipulation. I cleared the anterior chamber of blood by washing it out, and extracted the lens, but no amount of reasoning or persuasion

could induce the patient to remain still enough to permit of entire emptying of the anterior chamber. The wound healed kindly, though ruptured on the fourteenth day. There was a little iritis, but no adhesions. The patient was allowed to sit up from the first, and went about the ward. The eye was irrigated twice or oftener every day, and he had a bandage only for three days. The pupil is black, but is encroached upon by a tongue of iris from below, and under oblique illumination residual lens matter is visible. He will eventually have a good eye. End results: Vision 20-40. Patient did not desire further operation.

SUBMUCOUS OPERATIONS ON THE SEPTUM NASI, WITH SPECIAL REFERENCE TO THE RESECTION OPERATION*

BY CHARLES NELSON SPRATT, B. S., M. D.

MINNEAPOLIS

In a pamphlet entitled "The Breath of Life," (London, 1861) Catlin, an enthusiastic advocate of nose-breathing, makes some radical and amusing statements regarding the serious effects produced by habitual mouth-breathing. Of the facial expression of a chronic mouth-breather he says that "the mouths of the hyena and donkey are agreeable and even handsome by the side of such people." He states that among the Indians deafness, dumbness, spinal curvature, and death from teething and diseases of the respiratory passages are almost unknown and he attributes this exemption to the habit of breathing through the nose. "Shut your mouth and save your life" are his final words of advice.

The pernicious and far-reaching effects of nasal stenosis have not received in the past sufficient consideration from the medical profession. We are beginning to recognize the serious consequences of neglected adenoids. Nasal stenosis, due to this condition, is not only the most frequent cause of deafness in children, but often leads to mental dulness, anemia, and general poor health, and frequently produces physical changes in the face, nose, and thorax. In adults nasal stenosis is probably the most important etiological factor in diseases of the upper air-passages. Chronic laryngitis or pharyngitis, nasal quality of the voice, and chronic catarrhal otitis media are frequently secondary to nasal stenosis.

In the treatment of any of the above conditions any obstruction to free nasal breathing must

first be removed. Cases of asthma and hay-fever are frequently relieved, and sometimes cured, by the removal of polypi, enlarged turbinates, or other conditions producing nasal obstruction.

The causes of nasal stenosis are many: adenoids and polypi, already referred to, tumors, hypertrophied turbinates, and malformations, the most common forms of the latter being spurs and deviations of the septum.

If we attempt to find an anatomically perfect septum, we shall have almost as unsatisfactory a task as did the ancient Grecian philosopher in his quest for an honest man. In 594 skulls examined by Theile, Semeleder, Allen, and Zuckerkandle¹, 75 per cent showed deviations. Of 2152 specimens in the museum of the Royal College of Surgeons, examined by Morrell Mackenzie 76.9 per cent showed deviations of 0.5 mm. or more from the vertical. These statistics, of course, apply only to dried specimens. In the living subject deviations are even more frequent, as the cartilage is often bent when the bone is straight. Heymann² goes so far as to state that deviations are present in 99 per cent of all cases. It is a fact that symmetrical septi are more common in negroes, Indians, and other inferior races than in Europeans.

As to the etiology of deviations there has been much discussion, and many theories have been advanced. Without doubt traumatism plays a most important role. Injuries, often slight yet sufficient to produce fractures of the septum, are, especially in children, of frequent occurrence. The parts are soft and fragile, and are

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easily fractured. Such injuries are often overlooked or forgotten. In support of this statement, Zuckerdandl states, that before the seventh year, deviations of the septum are rare.

Mayo Collier⁴ has pointed out that deviations usually occur where the septum is thinnest. He believes that the blocking of one of the nostrils causes a rarefaction of the air on the same side. The long-continued pressure of air tends to push the septum to the side of the partial stenosis. This does not explain cases with thickening combined with deviations of the septum. Unsymmetrical development of the numerous parts entering into the formation of the septum doubtless explains some of the deformities. Other theories are numerous, but are far from satisfactory.

The parts entering into the formation of the septum are the perpendicular plate of the ethmoid, the vomer, the spines and palatal processes of both superior maxilla, the crests of the horizontal portions of the palate bones, the quadrangular cartilage, and the mesial portions of the two lateral cartilages. Between the vomer and the verticle plate of the ethmoid there is frequently a thin strip of cartilage. It can be seen that a slight blow might easily produce considerable displacement of the parts of the septum, and the subsequent callus formation would cause thickening.

Deviations have been variously classified. Based on form, we have the sigmoid, the vertical, the horizontal, the oblique ascending, and various irregular forms. Killian⁵ divides them into those due to traumatism and those due to defects in development. This classification is somewhat arbitrary and of little practical value. A simple yet practical classification would be as follows: spurs, deviations, and deviations with thickening. These would be divided into deformities of the cartilage, of the bone, or of both. Fig. 1 shows the principal varieties of deformities of the septum.

It is only in exceptional cases that deviations or septal spurs require surgical treatment. Whenever there is nasal stenosis it is decidedly bad practice and poor judgment to sacrifice turbinates if the removal of a spur or correction of a deviation will give sufficient space. Such practice cannot be too strongly condemned, as almost without exception, the enlargement of the turbinates is a condition secondary to the septal deformity, and unless there is true hypertrophy, this will take care of itself if the septum is made symmetrical.

As satisfactory results after operations on the septum have not been always secured in the past, and the removal of a turbinate is so easy and simple, many turbinates have been sacrificed when a spur or deviation of the septum was the cause of stenosis. The nose warms, moistens, and re-

moves foreign particles from the air. The turbinates are the most important factors in this process. A dry pharyngitis not infrequently follows a turbinectomy, and is a constant source of discomfort to the patient.

As to surgical treatment of spurs, you are all familiar with Bosworth's saw, or one of its modifications, with the trephine and burr, with the enchondrotome, and spoke-shave, and perhaps some have heard of the application of the cautery to the mucosa, with the idea of removing a spur of cartilage or bone.

For the cure of deviations Adam's or Roe's crushing operation, Blandin's method of making a large perforation in the septum, Steel's operation, with radiating incisions, Gleason's operation with a U-shaped flap attached posteriorly, and the more often employed Asch operation, in which crucial incisions are made through the deviation, the cartilage flaps being broken so as to destroy the resiliency of the later, have been the methods employed at different times.

I can see no excuse for such operations. Along with the seton, the method of curing hernia by means of injections and the controlling of hemorrhage by the application of hot irons or hot oil,



Fig. 1. Typical deformities of the septum.

we are to look on them only as crude methods of considerable historical interest. As rhinologists we must practice modern surgery and attempt to obtain per-primum healing.

It is interesting to note how frequently men and methods are too advanced for the times. Such has been the case of the now popular submucous operation which is by far the best operation that has been devised for the cure of septal spurs and deviations. A submucous operation for the removal of septal spurs was described, nearly sixty years ago, by Heylen⁶ (1847). His method was to elevate the mucous membrane, and remove the cartilage with scissors. In an article⁷ on the submucous operation, published nearly two years ago, I called attention to this method described by Heylen. Suckerstroff,¹⁰ in his history of the submucous resection, and also White,¹¹ in

a recent article, have since credited Heylen as being the first to describe this operation.

According to Bosworth, Chassaingnac,⁸ in 1851, published a method for treating deviations, similar to but far more surgical than the Asch operation. After elevating the mucous membrane over the deformity several incisions were made through the cartilage so as to destroy its resiliency. The mucous membrane was replaced, and the normal position of the septum was maintained by means of plugs until healing had taken place. These methods were apparently little practiced and were soon forgotten.

Ingalls,⁹ in 1882, published a method that involves the use of the same principles as the modern submucous resection. The mucous membrane was elevated, and a triangular-shaped piece of cartilage was removed. The flap was held in place by packing or by sutures. Peterson, in 1883, described a similar method. It was in Germany that the operation first came into general use, and the names of Krieg (who applied the method to deflections of the bony septum), Killian, and Hajek are associated with the development of the operation.



Fig. 2. The gouge.

In this country it is only in the last two or three years that the operation has received the attention merited. Freer has probably done more by his persistent writing than any other operator to direct attention to the method.

My experience with the submucous resection operation dates from the winter of 1902. Since that time I have performed the operation 71 times, 28 of these being on private patients. The latter have been followed and examined since operation, and the results noted. In some of these cases three years have elapsed since the operation. In a little over half of the cases the bony septum was involved. On account of the depth of the field of operation, the hardness of the bone, and the free hemorrhage these cases are more difficult than those with deviations confined to the cartilage. A good flap was obtained, however, in practically every case.



Fig. 3. S-shaped elevator.

Age.—Most of the patients were young adults. None were over fifty-five years of age, and one was a boy of five years. In this case both nares were almost completely blocked by deflections and thickening of the cartilage. These were resected, and a very satisfactory result was obtained. Two other cases were under ten years

of age. Some writers advise against operating on children. In general this is reasonable, but I would have no hesitancy in operating on old or young if conditions (stenosis) called for interference.

Instruments.—Contrary to many operators, I have not found that a large number of special instruments are necessary. A spring speculum, a small scalpel for the incision, a periosteal elevator, a stout pair of cutting forceps (Grüne-wald's or Freer's), and about fifty cotton-wound toothpicks are sufficient to do any operation on the septum; Killian's speculum and cartilage-knife, or Ballenger's modification of the latter, are of value in some cases. The gouge (Fig. 2) or the chisel must be thin, so as not to encroach on the available space in the nose. The edge must be very sharp or it will require considerable force to cut the cartilage and bone. The S-shaped elevator (Fig. 3) has proven much more useful than the straight models or those with the "nasal angle." When using it the hand does not interfere with the line of vision. The elevator should not have a sharp edge, as the flap might be cut through. The spatula portion of the in-

strument is used to retract the flap during the operation or to hold it in position while inserting the packing.

Light.—A head-mirror and a Welsbach or an incandescent lamp of 100-candle power with a spiral filament, are used to illuminate the nose. Some operators prefer an electric head-lamp.

Position.—The use of an operating-table, although rather severe on the operator's back, adds much to the patient's comfort, maintains the head in a steady position, and avoids fainting attacks.

Assistants.—In cutting bone an assistant with a light mallet is almost a necessity. He is also useful to hold retractors or the speculum. I have, however, done most of the operations unassisted.

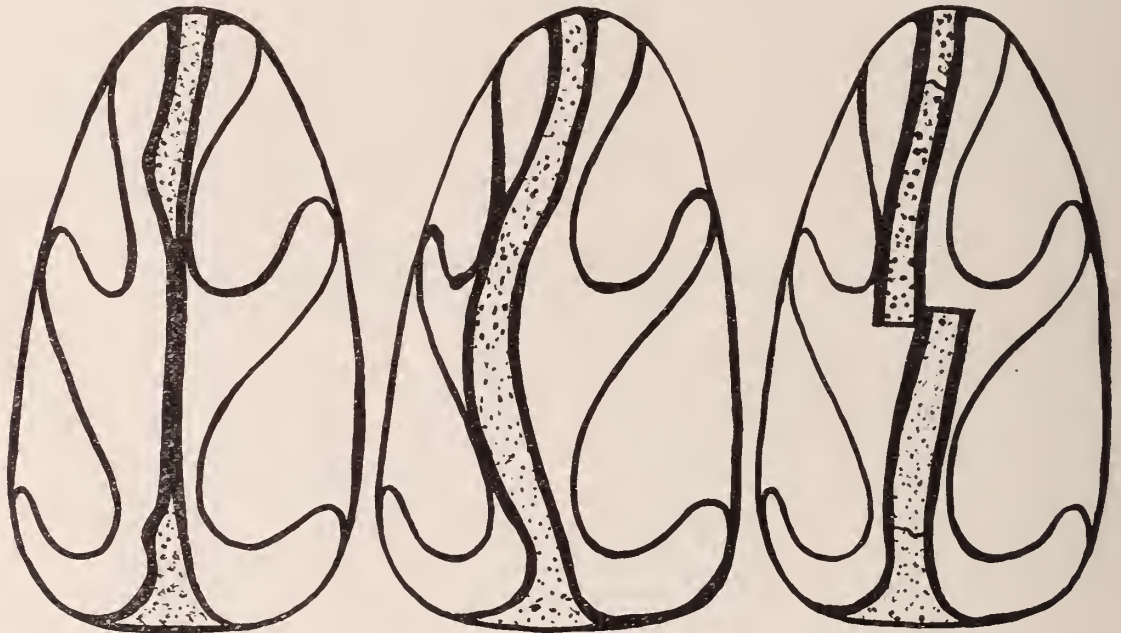
Anesthetic.—If two or three applications of cocaine (8 per cent) and adrenaline (1-2000) are rubbed over the mucous membrane or both sides

of the septum at five minute intervals, the operation can be done without the least pain. While cutting the cartilage and the bone the shocks of the mallet are felt. Stronger solutions of cocaine, left in contact with the mucous membrane, or the application of powdered cocaine, are unnecessary, and have produced toxic symptoms.

The infiltration method can be used, but it causes edema of the flap, and in a narrow nose this may reduce the working space. If the incision is made far anterior, as recommended by Killian, or if the mucous membrane has become changed to epithelium by reason of exposure, the infiltration of Schleich solution is necessary to cause anesthesia. If a general anesthetic, as in children, is desired, a modified Junker apparatus is of greatest value. By means of a hand- or foot-pump, air is forced through a bottle containing ether. The air and ether vapor are conveyed to the patient through a rubber tube, which is passed into the mouth. The ether bottle is kept in a basin of warm water. With this apparatus there is no mask to interfere with the field of operation.

and Hajek. The position depends on the deformity. It should be made far enough anterior to enable one to remove all the cartilage causing the deviation. With this vertical incision sufficient space can be obtained in all cases. If necessary the lower end may be extended part way across the floor of the nose, and the mucous membrane elevated. With the single incision there is less shrinking of the flap, the hemorrhage is slight and there is no danger of cutting off too much of the blood supply of the flap.

Elevating the Flap.—If the incision is carried partly into the cartilage, so as to cut completely through the mucoperichondrium, there is usually no difficulty in elevating the latter from the underlying cartilage. In some cases the mucosa is so thin or adherent that sharp dissection with the



RESECTION.

ASCH.

Fig. 4. A deviation without thickening. Comparative results of the resection operation and the Asch.

Preparation.—The patient's face is washed, and, if desired, a cloth mask with an opening for the nose may be placed over the head. The vibrissæ are cut, and the vestibule is cleaned with peroxide. No attempt is made to disinfect the nasal cavity. As a rule, few pathogenic bacteria are present in the deeper parts. Should a sinus disease be present, the nasal cavity is made as clean as possible by irrigations.

Incision.—Formerly I made an L-shaped incision on the convex side, the horizontal portion along the crest of the spur or deviation and parallel to the floor of the nose. The other incision was made at right angles to the first and anterior to the spur. During the past year I have used a single vertical incision as suggested by Killian

and Hajek. The further back one goes the easier it is to elevate the flap. Since using the vertical incision and beginning the elevation anterior to the deformity, I have found but little difficulty in separating the mucosa over the spurs and sharp ridges. The field is kept dry by the use of the cotton-wound toothpicks.

Removal of the Cartilage.—Some endeavor to remove the cartilage in one piece, either by the use of special knives or by means of Killian's forked knife or Ballenger's modification. After trial with the above instruments I still prefer the gouge. With this instrument the projecting cartilage is removed piece by piece, and when once cut entirely through, the mucoperichondrium of the opposite side is separated from the cartilage.

The bone is removed by means of the gouge and biting forceps of the alligator type. The bone along the maxillary crest is best removed by means of the gouge. Here, as well as in removing the bone from the vomer, a small mallet is required. When sufficient cartilage and bone have been removed from the septum to allow the flap to take a vertical position, the latter is pressed against the opposite side by means of the spatula, and is held in place by three or four small strips of gauze, and the spatula is withdrawn.

After-treatment.—A small piece of dry cotton is placed in the vestibule. This is changed when it becomes moist by the patient. Most of the patients have gone about and attended to their regular work. I have never had one go to bed, excepting after taking ether. It is perhaps better for the patient to remain quiet for the rest of the day of operation so as to avoid hemorrhage. The gauze is removed in twenty-four hours, and is not replaced. If oozing persist, a small piece of cotton is placed in the vestibule. In a few cases where the incision was very far anterior the flap was sutured. It is, however, an unnecessary procedure. For several days after operation crusts of mucus and serum are apt to collect at the line of incision. These are to be removed by the physician.

COMPLICATIONS

Infection.—The blood supply of the nose, like that of the face, is so generous that infection is rare. I have had one infection with subsequent shrinking of the flap. The healing was prolonged to three weeks, the average time after the removal of a spur with a saw.

Shrinking of the Flap.—This occurs in a slight degree in almost every case, although oftentimes the line of incision at the end of forty-eight hours can be made out only with difficulty. With the vertical incision the shrinking of the flap is less than with the L incision.

Perforation.—This ought to be a rare accident. It has occurred twice in my series. Should the mucosa of the opposite side be accidentally cut through the flap on the side of operation, in most cases will cover the opening. Perforation is, however, not of serious consequence.

Button-holing of the Flap.—This accident may occur if care is not used or if the elevator is too sharp. Healing is delayed a few days by this accident.

Sinking in of Nose.—I have never seen this complication. Menzel calls attention to this danger, and recommends leaving a sufficient width of cartilage above the resection to form an arch about 1 cm. thick.

Results.—As far as I am familiar, all writers agree on the permanency of the results. Cases

seen two and three years after operation show a smooth, straight, tense septum, and those with a previously normal mucous membrane have no scab formation. In regard to a new formation of cartilage; this is a point that has not been determined. Should this occur it would most likely be a very thin plate.

Time of Healing.—In most of the cases healing took place in 24 to 48 hours. The shrinking or destruction of the flap prolongs the process. There is usually swelling of the mucous membrane and crust formation for about five or six days. Several of my cases have been discharged at the end of three days, and have had no further treatment. To appreciate the quick healing one must remember that frequently a portion of the septum 2x5 cm. in area is resected.

The operation is one coming under the classification of ideal operations. That ideal results are not obtained in every case is due to the operator or to the special difficulties of the case, and not the operation. It is the best operation for every variety of deformity of the septum. With suitable instruments—and these are essential—it is an operation that can be done by any one familiar with, and skilful in, nasal work.

The principles of this operation are as follows: First, the removal of the cartilage or bone causing the deformity; second, securing perprimum healing by preserving the mucous membrane. In no other operation on the septum is an attempt made to obtain this. In removing spurs with a saw, healing by granulation follows. With the Asch, Gleason, Steel, and Roe operations no attempt is made to remove the excess of cartilage or bone.

Briefly comparing the other methods with the submucous resection, we note the following points: In the latter operation, the cause of the deformity is removed; healing is a matter of hours; free respiration is obtained on the day after operation; adhesions and synechiæ are practically impossible, as no raw surfaces are left; prolonged scab formation does not follow, as normal mucosa covers the septum; perforation is a rare complication; the operation is the best for all varieties of deformities.

With the Asch and other operations the cause of the deformity is not removed, and secondary operations are often necessary to remove the spurs due to overlapping of the cartilage. Healing requires weeks, and splints must be worn to hold the septum in position during the process. Free respiration is not obtained until sometime after operation. Adhesions, perforations, and scab formations are frequent sequellæ. These operations are only satisfactory in deviations of the cartilagenous septum, and are of little value

when the bone is involved or there is a thickening of the septum.

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HOSPITAL BULLETIN

A CASE OF HAY-FEVER CURED BY THE USE OF COLD APPLICATIONS

BY DR. O. H. WOLNER

ST. CLOUD, MINN.

C. W., occupation, a clerk; uses large amounts of chewing tobacco; habits otherwise very good; has had previous attacks of hay-fever for sixteen years, lasting for about three or four weeks.

In the fall of 1903 he called to consult me. He had a very bad attack of hay-fever. I used all the known remedies, such as adrenalin, antipyrin, Dobell's, Seiler's, and normal salt solution, with no satisfactory results.

In the fall of 1904 he told me he was always relieved when frost came. I suggested that he go into the cold storage plant, and he refused. I then went to his home, and applied cold compresses to his forehead and face wringing them out of ice-water, re-applying them as soon as they began to get the least bit warm. In about three-quarters of an hour he felt relieved. I kept the treatment up continually for about three hours, and he kept it up, off and on for about six hours, feeling all right, and he was entirely relieved for that season.

In the fall of 1905 the attack came on about September 11, and he went home and applied the cold compresses himself for about four hours, and was entirely relieved in twenty-four hours. The attack never returned. As my practice in this line is limited I should like to have others give this treatment a trial and report.

TWO INTERESTING CASES

BY DR. W. T. DUNCAN

FERGUS FALLS, MINN.

Two cases have occurred in my practice which may be of interest.

One was a twin delivery at full term. The first child was strong and healthy and was followed in a few minutes by the placenta. In half an hour the second child was delivered, and was still-born, but had not a bone in the body. The woman made a good recovery, but about two months afterwards, from worry over a drunken husband, she drank nearly an ounce of carbolic acid, and died in a few minutes in great agony.

The other case was that of typhoid fever in a girl twelve years old. In the third week she had a temperature of 105°, when she had a severe hemorrhage of the bowels, the temperature falling to 98°. During the next two days she had four distinct hemorrhages from the bowels, losing altogether nearly five quarts of blood. She was kept perfectly quiet, not even using a bed pan, the evacuations being passed on a draw-sheet. Her nourishment consisted of three egg-nogs daily and three or four pints of milk. The medication consisted of ½ gr. opium and 1 grain plumbi acetat every three hours.

I mention this last case to show that it is best not to measure for the coffin so long as the nourishment is retained and the pump keeps going. The young girl made a good recovery, and was in bed but six weeks.

THE TREATMENT OF INDOLENT WOUNDS: REPORT OF A CASE

By R. C. JAMES, M. D.

MINNEAPOLIS, MINN.

On August 22, 1905, Mr. L—— had his left foot crushed in a passenger elevator. He was brought to the hospital where an examination showed the skin to be broken upon the outer side and dorsum of the foot for a distance of eighteen inches. The third, fourth, and fifth tarsometatarsal articulations were badly lacerated, the base of the fourth and fifth metatarsal bones being crushed, both of which, with the base of the third, protruded from the wound. The cuboid was badly crushed, and had to be removed. The external cuneiform also was crushed, but only a portion of it was removed. The crushed bases of the fourth and fifth metatarsals were clipped off, and all fragments were removed. The inner aspect of the foot was not so badly injured. The skin over the scaphoid and internal cuneiform was broken, and a few small fragments of bones were removed. The first metatarsal bone was partially fractured.

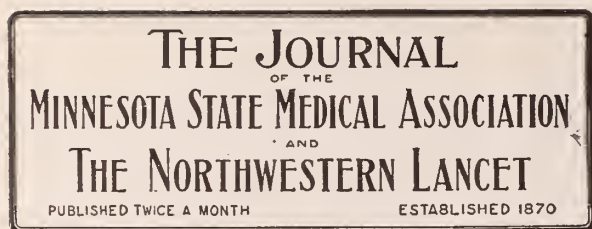
After ligating all bleeding vessels the entire wound was tightly packed with iodoform gauze, which remained for forty-eight hours, when it was removed and the wound repacked. The wound was packed every other day as above for eight weeks, at the end of which time the cavity had filled with granulation tissue. This left an area devoid of epithelium seven inches in length, extending from the base of the second toe to the external malleolus. It was triangular in shape, the apex situated at the base of the second toe was one inch wide, and the base, at the outer side of the foot below the exterior malleolus, was two and one-quarter inches in width. This area was dressed for three weeks with plain sterile gauze, and healed very rapidly, becoming five inches long and half an inch wide at the apex and one and three-quarter inches wide at the base.

At this point the wound became infected and the growth of the epithelium was brought to a standstill. After treating the infection vigorously for a few days the wound again became clean, but healing did not progress at all as

before. The edges of the wound became thickened and indolent, and would not grow at all. The area about the wound was badly inflamed and sore, and the patient did not rest well at night. The foot ached continuously. Hot boric acid packs were applied, but with no benefit, except to relieve the aching while they remained hot. The wound did not improve so we curetted the edges, and in turn applied silver nitrate, balsam of Peru, boric acid, wet and dry dressings, bismuth, formic iodid, and several other preparations, none of which was of any avail. Borochloretona was suggested, and on December 20, 1905, I began its use. The first few days showed no improvement, except that the patient rested more comfortably. On the fourth day the inflammation and swelling began to disappear, and the edges of the wound could be seen to be creeping onward. This rapidly progressed, the inflammation entirely disappearing at the end of the second week. The wound is now rapidly closing.

THE SERUM TREATMENT OF HAY FEVER

Charles H. Knight sums up the present status of this treatment as follows: A final decision as to its value does not, as yet, seem warranted. There are so many discrepancies and sources of error that the problem is not easy to solve. The method of treatment varies greatly with the physician. There is also lack of uniformity in the preparation and use of the serum as well as in the general management of the patient. The writer thinks that is fair to require an observance of the ordinary laws of health, even if such special precautions as excluding the night air during sleep, and so on, are not adopted. The strength of the serum and the sources from which it is obtained, as well as care and moderation in its administration, are important points. The writer believes from the mass of experience and literature relating to this subject, that a just estimate of the value of serum will soon be reached. The serum treatment at least does no harm even if it gives no better results than those attained by other methods.—Medical Record, March 10, 1906.



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MAY 1, 1906

THE GOVERNMENT'S ATTITUDE TOWARD TUBERCULOSIS

The Post-Master General has issued an order requiring the postal authorities to investigate the physical condition of its employees who are supposed to be suffering from tuberculosis. The order further directs that any persons who are tuberculous shall provide themselves with a private cuspidor to be carried to the office in the morning, and destroyed or disinfected at the end of the day.

The order is wise for many reasons. It will be educational, and will aid in the prevention of further infection by direct means, such as expectorating on the floor of the post-office building, and will probably prevent the contamination of mail which must pass through the hands of the suspected distributors.

The Minnesota State Board of Health is endeavoring in every way to educate the people on the subject of tuberculosis. This educational campaign is advisory, but not mandatory in all instances.

At a meeting of the Board in January the Secretary was directed to send advisory circulars to the various boards of health, boards of education, and superintendents of public schools, calling attention to the subject and suggesting that it would be for the best interests of the individual, as well as for those with whom he or she comes into contact, if teachers or pupils who had tuberculosis were excluded from the public schools. There is nothing irrational in this advice as it applies first to the person who carries a communicable disease, and suggests a means whereby the diseased person may be placed in better surroundings. Greater freedom in out-of-door life is good sound doctrine. The suggestions of the Board are advisory only, and such advice should be taken in the same spirit that prompts it. It takes time to educate the people even though they are in peril. It may seem heartless or cruel at first to even suggest that there are ways and means to avoid the spread of disease, but it must be done for the safety of the greater number. It may be a hardship for the teacher or the pupil to have an income curtailed or a school education interrupted, yet in the end it may do great good to both.

If the government and state bodies are waking up to the importance of the prevention of tuberculosis, why should not municipal and educational institutions assist in every possible way? The spread of tuberculosis is a serious matter, and its wide communicable possibilities should be kept in full view of the public.

THE SAN FRANCISCO DISASTER

The sympathies of medical men all over the country will go out to the victims of the recent earthquake and fire which destroyed so much of San Francisco, and particularly to the members of the medical profession who have suffered the loss of offices and equipment, as well as of their homes. As a rule physicians are not prepared for such personal emergencies, and in all probability very little insurance was carried by individual members. A disaster of this kind calls for special aid, and to that end a fund has been raised in Minneapolis and elsewhere to be given directly to medical men who are in need. Many physicians have already subscribed, and it is ex-

pected that \$1,500 will be raised by the physicians of Minneapolis. Dr. F. C. Todd is chairman of the physicians' fund, and will receive contributions. If it is necessary a physician will be sent from here to assist in the distribution of the fund. It would be well if the funds from all over the state could be gathered together, and thus save complications and misapplication.

The generous and spontaneous creation of a fund for the benefit of a suffering community is characteristic of the American people. Their sympathies are quickly aroused, and their enthusiasm is boundless when an appalling calamity is suddenly presented to them. To the chronic and local charities no such aid is possible, unless the public emotional center is deeply stirred. We have the poor and sick with us always, but we grow indifferent to their supplications unless some one thrusts them into our mental field of vision. The large numbers of tubercular patients who are poor and too ill or too proud to ask for help are left to unskilled care and to those without means; and yet one large subscription that headed a list of donors to the San Francisco sufferers would provide for the comfort and aid of twenty tubercular cases for a year. As it is now, these unfortunates are cared for by a few who appreciate the situation.

It is wise and commendatory for us to send money and food-stuffs to San Francisco, but we do it under the strain of impulsiveness and emotionalism. If the sympathies of the people can be reached, either by earthquakes or educational methods, they will usually respond by generous contributions. The exciting conditions surrounding a disaster is the quicker way to the purse-strings. The educational method is so slow in attracting attention that the sick expire by the wayside.

THE A. M. A. MEETING

The American Medical Association will meet in Boston June 5-8. To secure accommodations write to Dr. Charles Harrington, 366 Commonwealth Ave., Boston. The committee on hotels and transportation, of which Dr. Harrington is chairman, advises early application for rooms and suggests that members wishing the assistance of the committee specify the number of rooms desired, whether or not board is also desired, and the rate beyond which the com-

mittee shall make no engagements.

Much confusion and annoyance will be saved by direct application to the committee rather than to the hotel proprietors.

DELINQUENTS

Why should the medical man neglect his society dues? Is he dissatisfied or negligent, or are all of his business obligations of so little importance that he does not meet his just bills?

It is an unfortunate fact that many medical men are looked upon as poor business men, and are frequently rated as "poor pay."

Is it because they do not collect their own bills that they do not pay the bills of others? The poor business doctor should turn his books over to some business man, and incidentally learn how to conduct his own business on a proper basis. He would have more money for the comfort of himself and family, and would be more of a credit to the community in which he lives. To allow his medical society dues to lapse is very bad business from a business, as well as from a professional, standpoint. To be dropped from his county society for the non-payment of dues means that he ceases to be a member of the state and national associations, and is depriving himself of the association and organization benefits.

A list of delinquents on the editor's table, from the various county societies, shows an astonishing number of negligent doctors. The largest county society in the state, Hennepin, with 210 members shows that 17 have been dropped for non-payment of dues. The next largest, Ramsey, with a membership of 120, reveals the fact that 67 have failed to pay. In St. Louis county, 9 have dropped out, and so on down the list.

The annual dues are payable April 1st, and unless paid the member loses his place in the county, state, and national societies. Why not send your yearly dues to your secretary immediately on receiving notice, get it off your mind for a year at least, and make it your business to encourage the same thing in others by promptness and loyalty?

Of course all of these delinquents will pay up—some time; and then the increase in the memberships, which is now small, will be entirely satisfactory.

While writing this editorial the editor had forgotten that he would be unable to reach the delinquents as the non-payment of dues means the State Journal is cut off until all indebtedness is paid and he offers his apologies to those who read the editorial as they are in good standing and need no advice as to the manner of conducting their business.

MISCELLANY

IN MEMORIAM—DR. J. W. B. WELLCOME

By J. W. ANDREWS, M.D.

MANKATO, MINN.

Dr. J. W. B. Wellcome, of Sleepy Eye, Minnesota, died at his home on April 8. His death was caused by cancer, from which he suffered for more than a year. Thus was brought to a close the life of one of the most remarkable men in the history of Minnesota.

Dr. Wellcome was born in New Portland, Maine, June 4, 1825, and was therefore nearly 81 years old at the time of his death. His father, Timothy Wellcome, was of Scotch-English descent, and was a schoolmate of Hannibal Hamlin. His mother's maiden name was Mary E. Cummings. His father and mother were both well educated.

Dr. Wellcome graduated at the high school at Hallawell, Maine, at the age of 21, and at once turned his attention to the study of medicine, and graduated from one of the Eastern colleges, and began the practice of his life profession at the age of 25. Some years later he took post-graduate work in the College of Physicians and Surgeons, of Saint Louis, from which college he received a diploma. In 1856 he moved from New England and came to the then new West, locating in Wisconsin, where he practiced his profession for two years. In 1858 he moved to Garden City, Minn., which was then a thriving frontier village and was a rival of Mankato. In 1871 he again changed his location, going to New Ulm, in Brown County, where he practiced his profession three years. His next and last move was from New Ulm to Sleepy Eye, a new frontier town sixteen miles west of the former place. Here he practiced until about two years before his death, when he gave up active practice.

He lost his first wife by death, early in life; and the second wife preceded him to the grave about eighteen years. Four sons and one daughter survive him. The youngest son, Dr. J. W. B. Wellcome, Jr., is a successful practitioner of medicine at Sleepy Eye, having taken up the mantle so nobly laid down by his father. His oldest son, Fred H. Wellcome, is a graduate of medicine, but early turned his attention to commercial pursuits, and has been eminently successful. He is now the president of several banking institutions.

During Dr. Wellcome's entire professional life he was very active in his profession and was much sought after by those needing medical or surgical aid. He was always very reasonable in his charges and very kind to the poor. He was

in fair financial circumstances at the time of his death, and yet he had given away enough of his professional services on the frontier in his early practice to have made him a very wealthy man.

During his professional life he held many positions of honor and responsibility. In 1862 he was appointed by the federal government examining surgeon for the draft with head-quarters at Mankato. He was seven months surgeon of the army hospital at Mankato, established after the Indian massacre of 1862. While at Sleepy Eye he was for several years local surgeon of the Chicago and Northwestern railroad.

He helped form the first medical society that was organized in the Minnesota Valley, and was its first vice-president and secretary. He was a member of the Brown County Medical Society, of the Minnesota Valley Medical Society, the Minnesota State Medical Association, and the American Medical Association.

Dr. Wellcome practiced medicine in the Minnesota Valley more years than any other man, either living or dead. Perhaps the most interesting part of his professional career was at Garden City. When he located there, in 1858, he was on the extreme border of civilization. To the west lay a broad expanse of prairie with here and there a settler; the roads were mere paths, the streams without bridges, and many of the frontiersmen lived in sod houses. The timbered portions of the country prior to 1862 were inhabited by the Red Man. He and his tepees were more numerous than the white settlers and their shanties. The night was often made hideous by the whoop of the Indian and the howl of the prairie wolf. In winter frequent blizzards rendered traveling, not only difficult, but dangerous to life and limb. Such was the condition of the country when Dr. Wellcome began his practice in Garden City. Often at great risk to his life in winter he would respond to calls ten, twenty, and thirty miles away over the broad prairie and through blinding snow storms. During the spring freshets the danger was no less because of the swollen streams. These the doctor had to ford, sometimes swimming his horses to do so. So busy was his practice and so faithfully did he attend to it that in times when there was much sickness he was practically on the road all the time.

In 1862 occurred the memorable and most cruel Sioux massacre. Dr. Wellcome was one of the first to take up arms to protect the frontier settlers, and for awhile he acted in the double capacity of soldier and surgeon.

The writer was very well acquainted with the doctor, having been associated with him in business for nearly two years, and knowing him to be a physician of untiring energy, skill, and excellent judgment.

He was a Free Mason in high standing, and held the ancient order in sublime veneration. He was a member of the Congregational church.

While his last days were attended with much physical pain, he bore it with Christian fortitude. He rejoiced in the hope of rest beyond the grave, and had the blessed assurance that when time with him should be no more, he would be received into sweet communion with Him who died on Calvary's cross and with His holy angels.

Funeral services were held in the Congregational church of Sleepy Eye, Wednesday, April 11th. The church was crowded to its utmost capacity. The funeral services were in charge of De Molay Commandery, of which Dr. Wellcome was a charter member. Sir Knights from Marshall, Springfield, Redwood Falls, and other places attended the funeral services. The body was interred in Home cemetery. Peace be to his ashes!

REPORTS OF SOCIETIES

PARK REGION DISTRICT AND COUNTY SOCIETY

The Park Region District and County Medical Society held its quarterly meeting at Fergus Falls on April 18th. The meeting was well attended and the Society had a very pleasant as well as a profitable time.

The feature of the meeting was an address by Professor Wesbrook of the State University. The professor delivered a very able address upon certain infectious diseases and the work that the Minnesota State Board of Health is doing with reference to dealing with these diseases, as well as the relationship between the State Board of Health and the medical profession of the state.

The address was much appreciated, and will undoubtedly result in a closer co-operation between the physicians of the Society and the State Board.

The next meeting of the Society will be held the second Wednesday in July.

O. M. HAUGAN, M.D., Secretary.

MOWER COUNTY SOCIETY

The Mower County Medical Society held its regularly quarterly meeting at Austin, April 11th. Dr. Bjelland of Mankato, councilor for the Eighth District, in a short talk stated many opportune facts and suggestions on county organization.

Papers on "Diseases of the Heart" were read by Drs. O. H. Hegge, of Austin, and Dr. F. W. Schultz, of Waltham. Owing to a lengthy busi-

ness session part of the program was postponed until the July meeting. A large majority of Mower County physicians were present.

CLIFFORD C. LECK, M.D., Secretary.

HENNEPIN COUNTY SOCIETY

A mid-monthly meeting of the Society was held on April 18, Dr. F. C. Todd, president, in the chair and 60 members present. Dr. C. M. Oberg was proposed for membership by unanimous consent.

Dr. W. A. Jones gave an address upon the anatomy of the nervous system, which was demonstrated by lantern slides.

The president announced the following programs for future meetings:

May 7.—Discussion of the physical findings in growths of the anterior mediastinum, Dr. S. P. Rees. Malignant strictures of the colon, with special reference to diagnosis, Dr. H. W. Sweetser.

May 21.—The spirochaeta pallida, with demonstration, Drs. H. L. Ulrich and S. E. Sweitzer.
C. H. BRADLEY, M.D., Secretary.

NEWS ITEMS

Dr. J. C. Ferguson has located at Currie.

Dr. G. I. Smart, of Blue Earth, died last month.

Dr. H. S. Plummer, of Rochester, is visiting eastern hospitals.

Dr. F. O. Gronvold, of Oslo, will probably locate at Adams.

Dr. T. S. Kelly has moved from Garden City to North Mankato.

Dr. J. F. Avery, of Aitkin, will move to Minneapolis on June 1st.

Dr. J. W. Bowen, of Monango, N. D., will move to Butte, Mont.

Dr. A. W. Boslough, of Spring Valley Wis., will locate in Belgrade.

Dr. J. A. Carter has moved from Knox, N. D., to New Rockford, N. D.

Dr. J. F. Morrison, of Carpio, N. D., will move to Kenmare, N. D.

Dr. D. N. Jones, of Gaylord, is doing post-graduate work in Chicago.

Dr. J. F. Hendrickson, of Menomonie, Wis., has moved to Fertile, Minn.

Dr. J. V. Anderson, of Red Wing, has been doing special work in Chicago.

The Winona County Medical Society will hold monthly meetings hereafter.

Dr. C. W. Doran, of Montgomery, has sold his practice to Dr. J. B. White.

Dr. Charles A. Houston, of Grand Marais, has decided to locate at Park Rapids.

Dr. F. R. Wright, of Minneapolis, has gone to Vienna for several months' special work.

Dr. H. D. Edmunds, of Williston, N. D., is in Chicago doing post-graduate work at Rush.

Dr. E. L. Maurer, who sold his practice at Fertile to Dr. Hendrickson, will locate in St. Paul.

Dr. Marion A. Mead, of Minneapolis, was in San Francisco at the time of the earthquake and fire.

Dr. F. R. Woodward, of Minneapolis, who has been very sick with pneumonia, is rapidly improving.

Dr. Thomas McCracken, of Puyallup, Mont., was killed last month by being run over by a railroad engine.

Dr. R. H. Froelich, of Hebron, N. D., was fined \$50 last month for practicing medicine without a license.

Dr. H. Holte, of Crookston, has left for Europe, where he will remain, in study and travel, until October.

Dr. E. J. Hagan has located in Williston, N. D. He has been in Chicago some months engaged in post-graduate work.

The new hospital building to be erected for Drs. Karn and Bolsta of Ortonville, is now under way. It will be of brick and steel.

Dr. J. P. Kane, a recent State University graduate, has charge of the practice of Dr. W. S. Titus, of Mora, during the latter's absence.

Dr. Wilcox, of the staff of the State Insane Hospital at Fergus Falls was married last month to Miss Alice B. Rhone, of Wilkes-Barre, Penn.

Dr. H. C. Leonard, a homeopathic physician of Duluth, has been appointed by Gov. Johnson a member of the State Board of Medical Examiners.

Dr. S. J. Cotton, instead of Dr. G. G. Cottam, succeeded Dr. Noth at Marine Mills. Dr. Noth is now located at 1320 Sixth Ave. North, Minneapolis.

Brookings, S. D., is to have a hospital. Drs. F. H. Boyden and B. T. Green have secured enough pledges to justify the purchase of a site. The building will cost \$10,000.

Dr. J. P. Waste, of Plainview, died last month at the age of 69 years. Dr. Waste has practiced in Plainview since 1865, and was highly esteemed by the profession and by all citizens.

Dr. Francis McGuire, of St. Cloud, died last month on his seventieth birthday. He was a graduate of Rush. He was formerly associated with Dr. G. I. Smart, of Blue Earth, who died on the same day.

The Dakota County Medical Society has been reorganized with the following officers: President, Dr. J. C. Fitch; vice-president, Dr. T. A. Caldwell; secretary, Dr. H. H. Hazletine; treasurer, Dr. H. G. VanBeeck.

Bishop Shanley, of North Dakota, has agreed to build a hospital with 60 beds and two operating-rooms in Grand Forks, N. D., if the citizens will donate \$15,000 and a block of land. The offer will no doubt be accepted.

Dr. Powers, of Barrett, was given a surprise party last month at the town hall where nearly 400 people gathered to pay their respects. A purse of \$125 in gold was given him as a token of the appreciation of his neighbors.

The State Board of Medical Examiners elected the following officers at their April meeting: President, Dr. Thomas Lowe, Pipestone; vice-president, Dr. Margaret Koch, Minneapolis; secretary, Dr. W. S. Fullerton, St. Paul.

Messrs. Brand and Valentine, of St. Paul, who have built up a handsome business in physicians' supplies, have dissolved partnership. Mr. Valentine continues the business at the same location, and will give the same close attention to physicians' orders that built up the business so rapidly.

The following Minneapolis physicians have recently made changes in their office locations: Dr. J. C. Cockburn to Fourth St. and Central Ave.; Dr. A. A. Law from the Andrus Building to 313 Pillsbury Building; Dr. Emil Geist from the Masonic Temple to the Andrus Building; Dr. Wm. R. Murray to 510 Pillsbury Building, and Dr. J. F. Macnie to 304 Pillsbury Building.

At the April meeting the following physicians were granted licenses to practice in Montana:

Dr. Frank D. Merrit, Auburn, Wash.; Dr. Fred K. Cuttle, Red Lodge; Dr. Charles W. Smith, Kendall; Dr. Alfred Karsted, Butte; Dr. Axel E. Anderson, Anaconda; Dr. William L. Bishop, Butte; Dr. Asher C. Biddle, Warm Springs; Dr. Holm Holmsen, Alhambra; Dr. Charles R. Thornton, Corvallis; Dr. Jess N. Russell, Fort Benton; Dr. Samuel K. Campbell, Bzoman; Dr. John T. Foley, Lewistown; Dr. Elmer Fessler, Stevensville; Dr. Wilham E. Shea, Missoula.

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COMPOUND FRACTURES*

By E. A. HENSEL, M. D.

ALEXANDRIA, MINN.

Definition.—American and English surgeons call any fracture a compound fracture when the medullary substance of the bone communicates with the air through a wound of soft parts. German and French surgeons include compound fractures under the head of complicated fractures. *Open* and *closed* fractures would probably be a better classification.

History.—Before Lister's antiseptic work 50 per cent of these cases died. Volkmann made the statement that 40 per cent of the cases of open fracture at the Halle clinic died before antiseptics was begun. A similar condition prevailed in France and England. A report from the Pennsylvania Hospital covering the years from 1839 to 1857 gives a mortality of nearly 50 per cent. The New York Hospital also had a mortality rate of 50 per cent. Volkmann, by the use of strict cleanliness and carbolated preparations, reduced the mortality to 9 per cent. The average mortality now where asepsis and antiseptics are applied properly is about 5 per cent. I give these facts to show the importance of clean work.

Etiology.—The way in which an open fracture is produced has a bearing upon the prognosis and treatment. A direct open fracture caused by the passage over a limb of a wheel of a heavy vehicle, lacerating the soft tissues severely and grinding in much dirt, is more apt to be followed by infection, gangrene, and amputation than an open fracture of similar extent caused by the blow of an ax.

In case of a railway car passing over a limb it has always been understood, and I believe is

now, that the limb must be amputated regardless of the apparent condition of the wound. Pressure gangrene from ill-fitting or too tightly applied splints is an inexcusable cause. The modern small-calibre bullet causes extensive comminution, within a distance of five hundred yards. It only drills the bone the next five hundred yards, and beyond that range again causes more or less comminution.

Diagnosis.—The diagnosis is usually so easy that only a caution against probing of bullet wounds and handling of soft parts, unless surgically prepared, need be inserted here.

Pathology.—The following conditions may obtain:

Comminution of the fractured bone, a crushed condition of the medullary substance, and laceration of the soft tissues.

A certain amount of extravasated blood about the fractured ends, due to hemorrhage of the medullary tissue and to torn and crushed tissues and injured vessels. A torn intima of a blood vessel usually causing a thrombus. The peripheral circulation may be cut off by compression of the main arteries.

Lost nerve reaction. Fat embolism, of which rapid respiration, cyanosis, and subnormal temperature are symptoms. Senn recommends testing urine for fat for three weeks. Groute reports a case of fat embolism thirteen days after the accident. The presence of pyogenic microbes. In the gravest cases there is a mixed infection of pyogenic microbes and putrefactive bacilli. Primary infection usually manifests itself in the first forty-eight hours. Staphylococcal infection usually terminates in localized suppura-

*Read before the Minnesota State Medical Association, June 1, 1905.

tion and limited necrosis of the bone ends. Streptococcic infection, alone or in combination with staphylococcic infection, generally terminates in more diffuse phlegmonous inflammation, profuse suppuration and more extensive traumatic osteomyelitis. Inflammatory swelling, following combined infection with pyogenic and putrefactive bacilli, often causes a retardation of repair, necessitating secondary amputation. Traumatic osteomyelitis is usually limited to the ends of the bone, but by causing necrosis interferes with callus formation. Callus formation does not begin until the acute suppurative process has subsided. Usually an overproduction of callus takes place, forming an involucrum around the necrosed bone. When enough of the periosteum has been destroyed so as to leave an opening large enough, the necrosed portion of bone is usually thrown out after it has been separated from the living one, by a slow process of granulation. Often when the periosteum covers the bone completely the sequestrum must be removed.

Permanent enlargement of the bone occurs in all cases of open fracture when suppuration has taken place. A usually fatal complication is septic thrombophlebitis preceding pyemia.

Ferment intoxication, caused by the absorption of the fibrin ferment from the extravasated blood, is an early phenomenon, causing a slight rise in temperature.

Prognosis.—The danger to life and limb depends more upon the part of the body injured and the amount of crushing of soft tissues than upon the actual injury done to the bone. Some points affecting the prognosis have been touched upon under etiology. Conditions making the prognosis especially unfavorable are destruction of blood and nerve supply, extreme shock, concurrent constitutional taint, streptococcic or mixed infection, intemperance and excesses of all kinds.

Treatment.—In treating open fractures we must disregard the teachings of former masters. What was good surgery in Sir Astley Cooper's time might be criminal negligence today. The fact that wounds heal by first intention under conditions not at all in keeping with our ideas of asepsis and antisepsis of today, is apt to make us sceptical and forgetful of our duties as modern surgeons.

At times we witness great surgeons operate (who know how to be clean), and see them make some "little great" blunder in carrying out the process of asepsis, and yet get good results. Let us consider this all accident, luck, or what not. Let us be as clean as we can be, knowing that that is scientific and proven to be right. We read about Stockum, of Rotterdam, who is chief surgeon of the city hospital there now. Ninety

open fractures were treated in the year 1903 by him in the following manner: The wound was not irrigated. The foreign substances were removed with forceps. No ligatures applied unless large artery was bleeding. Balsam of Peru was then poured into the wound and penetration promoted by moving the limb a little. The fracture was then reduced as if it were a simple fracture, and the wound dressed with gauze impregnated with the balsam under an impermeable covering. The limb was then immobilized in a plaster cast for three weeks, the dressing undisturbed. The temperature always rises at first, but not seriously, and subsides to normal by the fifth or sixth day. At the end of three weeks the mortified tissues are found mummified, the edges of the wound show no trace of redness or swelling, the bones are found consolidating, and the wound granulating normally. He reports the treatment a complete success in all but four cases. In these there was some suppuration, but all recovered without a second operation, except one in which gangrene necessitated secondary amputation. In eight cases healing was delayed by the pressure of a foreign body causing a fistula and requiring removal. I take up your time to cite this because this surgeon has a responsible position, and yet sets an example of unsurgical conduct. How many men that read his report may not be influenced to place their faith in balsam of Peru, and neglect thorough cleaning? I began studying medicine when the dawn of our present great aseptic era was beginning to illuminate our horizon. We were using Peru balsam then, but almost invariably got what we were then pleased to call *laudable pus*.

The treatment of today, as practiced by the best men, emphasizes three things:

1. Be surgically clean.
2. Do not meddle with the wound any more than necessary; and
3. Immobilize.

When these three things are carried out properly it makes very little difference in which part of the body we find the break or how much damage is done, we shall give our patient the best chance for recovery.

Given an open fracture, what shall we do when called, say, two hours after the accident? Let this fracture be of the tibia and fibula. Both bones are splintered; the arterial supply of the foot is good; nerve conduction is not interfered with. Cause of accident, wheel of heavily loaded wagon passed over leg. Much dirt is ground into the tissues, which are considerably crushed. The accident occurred ten miles from town, the patient is a transient and must be brought to the hospital. His general condition is good, age 50 years. First secure temporary immobilization by applying a plaster cast over a good deal of aseptic

gauze, over which absorbent cotton is laid quite thickly. Allow the plaster to harden, then remove the patient to town. After the usual preparation anesthetize him and remove the cast and dressings down to the gauze, let a nurse or an assistant wash and scrub the healthy portion of the leg and foot with soap and water, finishing up with a bichloride of mercury 1 to 1,000 douche. Wrap clean gauze around the leg and foot, except over the wound. Now begin irrigating the wound with a strong saline solution, a tablespoonful to a pint of hot water. When the gauze in the wound is thoroughly saturated remove it with sterilized forceps. If the wound is large enough to inspect the bone ends do so without inserting the finger. It may be necessary to enlarge the wound, both for purposes of inspection and digital examination. Unless absolutely necessary, avoid inserting the finger, even though it is sterilized. Ascertain condition of tissues and bone with as little handling as possible. Remove all pieces of bone entirely detached from the rest of the bone, and any foreign matter. Irrigate for a long time with hot strong saline solution. Unite the two ends of the tibia with a thick cord made by twisting a number of threads of formalized catgut together. This can be done by drilling and passing the cord through the bone, or by cutting notches in the bone and tying together. Obliterate all dead air spaces by suture. Insert a small piece of sterilized gauze into the most dependent portion of the wound and sew up the wound entirely, except where the drain is inserted. Apply an ample quantity of carbolated gauze, over which apply a fairly thick layer of absorbent cotton. Over this put on a roller bandage, apply sheet wadding to the rest of the foot and leg to a little above knee, beginning at toes. Then apply a plaster cast. Before the plaster is hard, cut through it so as to form an anterior and posterior moulded splint. The wound being anteriorly, remove the anterior part of the cast and allow the leg to rest in the posterior splint. We may now use a Hodgen's or Smith's anterior wire splint to suspend the leg while in the cast. This gives the patient a better chance to move around in the bed. Leave the dressing unmolested for at least 72 hours. The rise of temperature shortly after the dressing is applied is due to fibrin ferment, and will subside. At the end of 72 hours aseptically remove the dressing, pull out the drain, and if no pus is present immediately close the opening by a new gauze pad. Finish the dressing as before, and do not remove for two weeks. At the end of that time the wound should be healed. If this is the case remove the dressing, take out the stitches, wash with pure alcohol, and apply a complete plaster-of-Paris cast. Suspend as before.

In case of infection we must not wait 72 hours, but must remove the dressing immediately, open the wound, irrigate thoroughly again, remove any loose pieces of bone, even though attached partially to the periosteum, make counter openings, if necessary, at dependent points, put in half-inch drains, suspend in a Hodgen's splint, and irrigate daily or twice daily, or continually, as the case may require. Later a plaster cast may be applied, bracketed and strengthened by inserting pieces of sheet iron. Cut a window in the cast over the wound, making it large enough to allow of an exposure of at least one inch of intact skin around the wound. Dissolve dental rubber No. 2 in commercial chloroform to make a gelatinous paste; absorbent wool is worked into this until a meshed mass results. Now take strands of the rubber-laden wool and rapidly pack layer after layer around the wound between the cast and the skin until at every point a snug filling exists. Then use a plain chloroform solution of the rubber over the entire area. This is Crouse's method of obtaining a clean field around the wound, and enables us to irrigate it. The case should be shellacked.

In cases where the blood supply has been cut off a good deal, and we wish to know how much sloughing we are to expect, induce Esmarch's artificial ischemia. By bandaging from below upwards, with the limb elevated, force the blood out of the tissues. Then take off the bandage. Those places that show no signs of return of circulation will slough. Before amputating, it is wise to try every other method first, and then consult with a brother practitioner who is conscientious and well posted in surgery. Any tyro can take off a limb, but it often requires intelligence and natural aptitude far out of the ordinary to save one.

There are many more things which could be said on this subject, were it not for the time limit, especially with reference to the various methods of fastening the bone ends in place by means of silver or iron wire, clamps, screws, steel and ivory nails, bone ferrules, etc. These, I hope, will be discussed, as there is so much difference of opinion regarding their use.

When performing external urethrotomy without a guide it is often possible to trace the continuation of the urethra proximal to the opening, by means of a filiform bougie, even when all devices failed to secure the introduction of a filiform before the operation. If a filiform cannot be thus passed through the urethral wound, suprapubic pressure on the bladder may demonstrate the location of the urethral orifice by the escape of a drop of urine or by bulging of the membranous urethra.—American Journal of Surgery.

SEPTIC ENDOCARDITIS: REPORT OF A CASE*

BY H. L. STAPLES, A. M., M. D.

AND

WM. M. CHOWING, A. M., M. D.

MINNEAPOLIS

It is not my purpose to present a paper on septic endocarditis, but to give merely a brief and imperfect resume of the subject that the case which we detail may be more clearly comprehended.

Twenty years ago Weichselbaum demonstrated the fact that septic endocarditis is due to the action of various bacteria, especially pneumococci, staphylococci, streptococci, and gonococci. In 1896 I saw him exhibit the last-named organism, which was taken from the heart of a man who had died of an acute gonorrhea.

Less frequently are found the bacillus of typhoid, tuberculosis, diphtheria, and the colon bacillus. The nomenclature is prolific with descriptive adjectives, as septic, ulcerative, malignant, diphtheritic, infective, fungating, verrucose, mycotic, vegetative, etc.

The difference between the simple acute and septic form is one of degree only, dependent upon the virulence of the micro-organisms and the susceptibility of the patient.

The sources of the infection are septic wounds, abscess, the puerperal state, various suppurative lesions and acute osteomyelitis. Rheumatism, dystentery and the acute infectious diseases play an important role. Some cases have been reported associated with gallstones. Its connection with pneumonia has given rise to an interesting article by Preble. According to Osler, 75 per cent of the cases are a sequel to chronic valvular disease. A predisposing cause would be anything which depresses the vital forces, as long continued exposure, alcoholism, and chronic diseases.

Various types are described, such as typhoid, septic, malarial, cerebral, and cardiac, according to the predominance of the manifold symptoms. The first may have a sudden onset, chills, high fever, headache, enlarged spleen usually, various hemorrhages and rashes, tongue dry and brown with early symptoms of embolism and cardiac depression; or we may have a slowly increasing prostration, irregular fever, and more or less pronounced cardiac signs.

The septic form is much longer in duration, characterized by variable fever, chills, and sweating, gradual loss of flesh and strength, hemorrhages, rashes, enlarged spleen, and emboli in different organs. The resemblance to malaria is sometimes very exact, paroxysms recurring at regular intervals with subsequent normal or subnormal temperature. In the course of the disease various types of malaria may be simulated. In the cerebral form there is marked meningitis with severe headache, vomiting, and often convulsions. The endocardial symptoms are most prominent in the cardiac type, the constitutional symptoms being less severe. These various conditions simulate each other closely and often are blended together. The cardiac physical signs are not conclusive. Murmurs, variable in character, especially if diastolic or appearing in another locality, aid greatly in arriving at a correct conclusion. Sometimes no murmur is present.

The diagnosis depends upon a grouping of the various phenomena: the irregular pyrexia, often sudden onset, and prostration, enlarged spleen, embolism, nephritis, changeable character of heart sounds, general septic manifestations. Retinal hemorrhages sometimes occur. Leucocytosis is the rule, but in irregular and protracted cases it may be slight or absent. In the pneumococcal infection the white corpuscles may be reduced. Murmurs with septic symptoms without leucocytosis are indicative of this form of endocarditis. The finding of micro-organisms in the blood would be conclusive evidence. Instead of the rose rash of typhoid the rash is erythematous, purpuric, papular, or even pustular. The Widal reaction may be present where a mild unrecognized typhoid fever has preceded even years before. This fact complicated the diagnosis in the case of a well known physician in this city.

Tuberculosis may occasionally closely resemble it.

The history, manner of onset, and slight physical signs must be considered. Tubercle in the choroid or bacilli in the sputum would be positive evidence. Cardiac signs, nephritis, embolism and rashes would indicate endocarditis.

The duration is from a few days to over one

*Read before the Minnesota State Medical Association, June 1, 1905.

year. Wasserman gives the case of a girl who died in three days from the beginning of the attack, and he was able to produce acute articular rheumatism in animals by means of the bacteria taken from the endocardium.

The prognosis is exceedingly grave. Of ten cases that I have seen in consultation in hospital and private practice during the past three years, all have died. Rarely a presumably positive case is reported as making a complete recovery, notably in children.

Mr. X. was a lumberman, age 51 years, whose father died of apoplexy at 70; mother living and in good health at about the same age. A strong vigorous man, except evidence of old endocarditis in shape of a mitral insufficiency and a profuse pyorrhea alveolaris. In the fall of 1904, after long-continued exposure to wet and cold in the woods he became slightly weaker, appetite diminished, and he lost a few pounds in weight. In August, 1905, he was sent to a hospital, where for two months he was considered to have a typical typhoid fever. He was then removed to another locality where under careful medical attendance and nursing, combined with the most nutritious diet, he gained in weight and strength for a few weeks, and then continued to decline as during the supposed typhoid. At one time an extensive erythema nodosum occurred. I first saw him on January 24, 1906. The temperature chart showed an irregular curve from 99° to 103°, pulse 90 to 110, tongue coated but not dry, bloody discharge from each nostril, more profuse on the right, right sided hemicrania, pulse full and bounding, and had been at times weak, intermittent, and irregular. Spleen greatly enlarged, extending to pelvis. He complained of great pain in the lower segment, which I attributed to an infarction. Lungs nearly normal except slight dulness at left apex and a few patches of harsh respiratory murmur.

The cardiac dulness extended one inch beyond the right sternal border. Apex in the left nipple line slightly lower than normal, and impulse diffused over an area one inch in diameter. There was a loud systolic murmur at the base transmitted upwards, another at the apex and a less pronounced diastolic murmur, basic, not transmitted over a large area. The Widal test was negative. Several examinations of the blood had shown no leucocytosis. The urine showed a small amount of albumen with hyaline and granular casts. Occasional sweating was noticeable. No marked chills had been reported. Cheeks were flushed, and the skin over the malar bones pigmented. X-ray photograph showed a probable dilatation of the aortic arch, and infiltration of left apex. For two weeks he continued about the same, one day feeling well enough to be

wheeled out of doors, as it happened to be unusually warm. On February 6th he had a severe headache and a temperature of 103.5°. In the evening the nurse noticed a sudden change in his respirations. I found him unconscious, breathing stertorously, pupils dilated and unaffected by light, and complete paralysis of the extremities, and buccinators, and throat muscles. Death ensued in three hours.

The medical diagnosis was septic endocarditis, greatly enlarged spleen with infarction, nephritis, dilatation of right and left ventricles, dilated aorta, and slight consolidation of left apex. Death from cerebral embolism or hemorrhage.

The practical teaching in this case takes one immediately to the manner of infection. A profuse pyorrhea alveolaris for a long time until systemic infection occurred.

The immense importance of oral sepsis has not been sufficiently forced upon us. A large percentage of mouths contain teeth, carious or loaded with tartar, ulcers, abscesses, foul granulations, antrum diseases and necrosis of the maxillæ. Pus is pouring from the alveolar process, and the breath is of the sewer. There is a continuous exposure to increasing doses of the poison.

Grave anemias, infections of the stomach and bowels, especially if ulcer exists, infections of the gall-bladder, appendix, heart, spleen, kidneys, and pleural cavities are undoubted results in many instances. A parturient woman died soon after delivery, despite the most scrupulous cleanliness. Cause, chronic antrum disease. A prominent surgeon recently remarked that his gastro-enterostomies did better when the mouths were rigidly disinfected. The same holds true with gastric and duodenal ulcers treated medically. You will perhaps recall the story of the operator whose case did badly until his alveolar abscess was healed. Pneumonia frequently follows mouth operations. An English poet years ago said:—

“See to thy mouth, diseases enter there.”

Oral sepsis is a dangerous malady and deserves our most careful consideration. As an oral disinfectant a very weak solution of bichloride of mercury holds first place. There is a legion of more or less worthless proprietary remedies on the market.

Septic endocarditis is of great clinical importance to us all, no matter what special line of medical work we are pursuing. It explains conditions which up to a few years ago were vaguely understood. The symptoms are so extremely varied and complex that the recognition of the malady in some cases is impossible with the information which we at present possess.

POST-MORTEM EXAMINATION MADE ABOUT TEN HOURS AFTER DEATH

By WM. M. CHOWNING, A.B., M.D.

Body that of a well nourished individual of about 150 lb. weight and 5 ft. 8 in. length. No scars or marks present.

Section made from upper end of sternum to pubes.

Abdominal wall about three inches in thickness, due to fat deposits.

Omentum is adherent to the parietal peritoneum over a space about four inches in length and three inches in width, beginning at a point about two inches above, and extending to a point about two inches below the umbilicus—evidently an old inflammatory process. There is a small amount of fluid in the abdominal cavity, due either to the presence of these old adhesions or to an obstruction to the venous circulation. Bladder is completely distended with urine.

Intestines slightly distended with gas and of good color. Spleen about five times normal size, dark red in color, soft, easily torn, and splenic substance in a semi-fluid condition. The organ on removal for examination shows an infarct about four inches long, and about two inches in thickness at the base. This infarct is located so that it involves the notch; however, the major portion of the infarct is situated above the notch. The organ exhibits no evidence of old inflammatory processes.

The right kidney shows pericapsular fat deposit of large quantity. The organ is swollen and enlarged, being six inches long and four and one-half inches wide; rather soft and pliable. Ureter apparently normal, and blood supply furnished through three vessels, the renal and two accessory arteries. Both accessory vessels being given off from the renal and entering the pelvis above the latter. The capsule is not adherent; veins injected, giving the appearance of an acute nephritis. On section the cortex is seen to be swollen to about two times its normal thickness, i.e., about 2 cm., and the injection of the veins is more apparent. Pelvis is not dilated.

The left kidney is surrounded by much fat; blood supply normal; ureter apparently normal. On removing the kidney and cutting the ureter one ounce of a pus-like fluid exuded. The organ is injected to about the same extent as the right, and on removal from the body the capsule was stripped off inadvertently and without extra effort. The organ is 6 inches long by 2 inches in width. Fetal lobulation is present. It has a highly granular appearance. On section the cortex is seen to be about 1 cm. in thickness. The dilated pelvis contains some of the pus-like fluid.

The right lobe of the liver is adherent to the parietal peritoneum by many slender thread-like adhesions. These are torn with difficulty. The left lobe is involved in these adhesions only to a slight extent.

The gall-bladder contains small amount of watery dark bile.

Glisson's capsule is thickened, particularly over the right lobe, and is also the seat of small particles of fibrin. On section the organ is granular in appearance, giving a fairly typical picture of a nutmeg liver, and cuts with ease.

Pancreas, apparently normal.

Thoracic cavities, normal.

Right lung, normal. Left lung, normal, except that it contains a calcareous mass about one-half inch in diameter at apex. The lung tissue immediately surrounding the mass has a perfectly normal appearance.

Pericardium, normal. Pericardial fluid, normal in quantity and consistency.

Aorta is markedly dilated, but no evidence of a thinning of the wall. No evidence of arterio-sclerosis present.

Right ventricle, apparently normal.

Left ventricle, dilated and contains some old clot. Tricuspid valves seat of slight amount of nodular vegetation. These nodules are on the upper surface, and vary in size from a pin-head to masses 3 mm. in diameter. The left wall is slightly thickened.

On opening the cranium a large amount of clot is found, extending over three-fourths of the right hemisphere down to the base of that side, and then across to the base of the left hemisphere in the temporal region, and extending backward towards the medulla. No evidence of inflammatory condition is present. On removing the clot a macerated condition of the anterior temporal portion of the right hemisphere is present, which on examination reveals a large rent into the ventricle beneath. On following this opening the ventricle is found to be filled with a mass of clot about the size of a baseball.

MICROSCOPICAL EXAMINATION OF TISSUES

The spleen shows only a slight amount of necrosis following infarct.

Both kidneys show slight parenchymatous change.

Sections from the left organ do not reveal any evidences of abscess formation, and my conclusion is that the pus-like fluid which exuded from this organ at the autopsy was the result of obstruction along the ureter lower than my examination extended, damming back the urine onto the pelvis where it underwent chemical change following death.

Liver slightly fatty.

Pancreas, normal.

Heart shows only slight evidence of myocarditis.

Valves on section show a deposit of inflammatory products, and round-cell infiltration.

Diplococcus-like bodies are evident in specimens stained with methylene-blue and eosin.

Cultures from the valves were not made.

THE PRACTICAL MANAGEMENT OF TYPHOID FEVER

Charles E. Nammack, in his method of treatment, after a thorough moving of the bowels, directs the use of milk, eggs and water, as the essential foods during the febrile period. The necessary mineral salts may be given in the form of fruit juices and fruit jellies, and a daily cup of strained vegetable broth or soup flavored with beef or bacon. These viands also satisfy the patient's longing for something besides milk and albumen water. If milk does not agree, whey, buttermilk, koumiss, or peptonized milk may be taken. Ice-cream offers a change. The average case will not need alcohol until later in the disease. Clarified honey, cream, and the juice of broiled beefsteak may also be given. A cup of hot coffee well diluted with milk may be given early in the morning. As to drugs, a combination of hydrochloric acid and liquid pepsin may be given after the food. Special symptoms and complications in typhoid fever require great watchfulness. In cases of perforation, surgical operation is necessary.—*Medical Record*, April 28, 1906.

CARBOLIC ACID IN MODERN SURGERY*

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MINNEAPOLIS

In the early days of antiseptic surgery carbolic acid came prominently into view as an antiseptic agent, being used in 2 to 5 per cent solutions for instruments, hands, operative field, and as atomized spray in an attempt to sterilize the air of the operating-room. Similar solutions were also used to irrigate clean and infected wounds, and as an ingredient of the antiseptic dressings of Lister.

It was soon found that solutions of effective strength were very irritating to both operator and patient, and toxic effects became an important and not uncommon accident. In spite of these disadvantages, the surgical use of these carbolic acid solutions still persists, aided by the advice of most modern surgical text-books and by the exploitation of various proprietary nostrums containing carbolic acid. This survival, based on ancient traditions, is most unfortunate, on account of the remarkable property of this drug of causing gangrene, even when used in 2 to 5 per cent solutions. Harrington has reported during the past year eighteen cases of carbolic acid gangrene occurring in the Massachusetts General Hospital, and one hundred and thirty-two cases from literature. He states that this form of gangrene is regularly caused by dressings kept moist with 1 to 5 per cent carbolic acid solutions, and may be complete in twenty-four hours. Personally, I have lately observed a case of partial gangrene of the forefinger checked only by removing a dressing moistened with a proprietary remedy containing about 3 per cent carbolic acid. Another personally observed accident was the occurrence, in a large hospital, of fatal poisoning from the application of 5 per cent carbolized stupes to a leg which was the seat of an acute lymphangitis. Here the poisoning was due to the negligence of an orderly, who failed to thoroughly mix the acid with the hot water, and thus caused severe burns, through which the carbolic acid was absorbed.

Even before the change from antiseptic to aseptic technic in surgery, safer and less irritating antiseptic agents had been found, and carbolic acid had ceased to play an important part in the surgical world. It may be of interest to note that in Lister's clinic, where antiseptic surgery had its birth, Watson Cheyne still operates with al-

most the same technic as was used by his illustrious predecessor, and 5 per cent carbolic is still used on instruments, skin, and dressings.

It was only in November, 1900, (Philadelphia Medical Journal), when Seneca D. Powell, of New York, announced the utilization of the fact that alcohol neutralizes carbolic acid and prevents any destructive effects from its local use, that this agent reappeared before the surgical public as a most useful and potent addition to its armamentarium. By this discovery carbolic acid became transformed from a very irritating and dangerous toxic agent into a most powerful and penetrating antiseptic, which, used with the neutralizing alcohol, is freed from all harmful qualities. Although its routine use has revolutionized many fields in surgery, it would seem trite to speak of it before this Association, were it not that so few seem to realize its importance and to utilize its far-reaching powers for good.

The writers on surgery are singularly at fault in this matter, as out of a dozen modern text-books only two make bare mention of the fact that alcohol neutralizes carbolic acid, and one of these shows clearly by the context that the author knows nothing of its practical use. All these writers, however, devote some paragraphs to the uses of carbolic acid in weak solutions, unchanged since the days of Lister. One author (1903) says that when the strong acid is used it must always be washed carefully away from the skin or cavity by water, a procedure to be carefully avoided. With such instruction, it is hardly surprising that the teachings of Powell are so little utilized.

The uses of carbolic acid to which I wish to call the attention of the Association are entirely those of the so-called pure acid, *i. e.*, the liquefied crystals. Such uses depend, first, upon its power of producing plastic inflammation; second, upon its action as a powerful and penetrating germicide.

I purposely omit any consideration of the injection of various weaker solutions into nevi or hemorrhoids for the purpose of causing coagulation of the intravascular blood, as such procedures are both uncertain and dangerous, and should be superseded by safer and better surgical methods. I also omit doubtful uses, as in erysipelas and spreading gangrene.

Under the first head, of producing plastic in-

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flammation, can be mentioned the cure of hydrocele and other cystic processes by the injection of small amounts of the pure acid without the use of alcohol. The same technic can be used in various chronic serous inflammations of the bursæ and tendon sheaths. Under the second head comes its most valuable uses: First, instruments can be quickly sterilized by a few minutes immersion in the 95 per cent acid; next, all septic wounds can be at least partly sterilized by mopping them out with 95 per cent carbolic, followed by alcohol, the process not seeming in any way to interfere with prompt healing, providing no watery solutions are used until all acid is neutralized and the acid is not left in contact with the tissues over two minutes before neutralization. In all acute suppurative processes the course of the disease may be shortened and extension averted by free incision followed by carbolic and alcohol. In all tubercular softening the use of carbolic and alcohol after evacuation of the cavity enables us to close such cavities without drainage, and thus much expedite healing. Cold abscesses, when drained, will regularly become infected by pus germs and cause great annoyance, so that any technic which secures prompt healing is a blessing to both patient and surgeon.

All of the above is well known to most of you, but none the less much neglected as a regular routine technic.

Another more novel use of the acid is in cases of abscess of unusually infective character, as in glanders, actinomycosis, etc., where a common result of incision is the infection of the newly made wound and consequent further spread of the disease. In such cases a technic which I have already reported as used with success in a case of pyemic glanders, was as follows: An incision was made down to the neighborhood of the abscess, and the wound filled with 95 per cent carbolic, and the skin edges mopped with the same. The abscess was then incised through this carbolic field, and the pus and carbolic was mopped away, and the wound then filled with alcohol, thus neutralizing all remaining carbolic. The wound was then sutured with only a small strip of gauze for drainage, and healing was fully as prompt as if an ordinary abscess had been incised and drained in the ordinary way, and no secondary infection occurred. It seems to me that this technic might be used to advantage in all deep acute abscesses where there is regularly danger of secondary infection of the area opened up when they are evacuated.

In tubercular tendosynovitis we have a condition most difficult to control, except by excision of the whole affected tendon sheath, a most formidable operation in many cases. A very satisfactory technic is to incise the swelling at

one end, evacuate the rice-bodies generally present, and then swab out the whole inflamed area with pure carbolic, followed by alcohol, and close without drainage. In quite a large proportion of cases this will be successful and will avoid a trying and not wholly satisfactory operation.

In tubercular and some other subacute inflammations of joints good results can be obtained by arthrotomy, either with or without curettement, followed by the thorough use of carbolic and alcohol to the whole synovial membrane. The joint is then sutured without drainage, and fixed for some weeks, which treatment gives very satisfactory results in cases where the morbid process is confined to the synovial membrane.

Another unusual use of this technic is where strict asepsis of the skin must be obtained in a region the seat of chronic infection and inflammation. In such cases the skin, after being cleansed in the usual way and dried, may be scrubbed with 95 per cent carbolic and then alcohol, with most satisfactory results.

Carbolization of the stump of the appendix after appendectomy is a quite regular procedure, as is a similar application to the cervical canal of the uterus before hysterectomy.

All wounds which may possibly be the seat of tetanus or gas-bacillus infection should receive the same treatment; in fact, I think that all recent wounds should be so treated unless infection is at least very improbable.

A few precautions should be noted: First, never apply the pure acid to a moist surface, as this will result in severe burns; hence, the field should be thoroughly dried before using the acid, and the alcohol should be applied to every point touched by the acid; second, the acid should never be left in contact with wound or skin for over two minutes. This is Powell's limit, but in practice one-half of this time is a good working rule, although time enough should be taken to allow the acid to exercise its natural powers of penetration in order to get the best results.

The use of carbolic acid in the radical cure of hydrocele has been forgotten, or pushed aside in the operative furor of recent years, but it still remains a most useful and satisfactory method of treatment. The technic is simple, it being only necessary to evacuate the hydrocele, and then, while the trocar or needle is *in situ*, inject fifteen or twenty drops of the acid, withdraw the trocar, and by manipulation insure contact of the small amount of acid with all parts of the sac. The patient should stay in bed for twenty-four hours, as there is usually some swelling of the sac, but little if any pain or febrile reaction. This procedure has been very successful in my hands, and fails, I think, mainly

on account of two conditions: First, the hydrocele is not monolocular, and hence only part of the cyst wall is reached; or, owing to carelessness, the trocar slips a little and the acid is injected outside of the tunica vaginalis, and may cause a slough.

I was interested, while in New York a few years ago, to hear a quite well-known surgeon describing his operation for hydrocele to some country practitioners. I watched with considerable mystification the withdrawal of the fluid and injection of something from a syringe into the sac. On inquiry of the house surgeon, I found that the fluid injected was carbolic acid, and that the original feature which constitutes the operation of the eminent surgeon was the injection of just three drops.

This technic can be utilized in cysts of bursæ or tendon sheaths with considerable success, and is also of use in a ranula which it is not convenient to remove by dissection.

I hope the foregoing may persuade some of the members of this Association that in 95 per cent carbolic acid we have an agent powerful for good, whose systematic use has been greatly neglected.

DISCUSSION

DR. H. J. O'BRIEN (St. Paul):—The case of Dr. Stewart's is very conclusive, and I trust that many of the gentlemen here will make use of some of his suggestions. We have known for some time that carbolic acid is used with a great deal of success. The principal points brought out in the paper may be briefly noted. Gangrene from the use of carbolic acid is sometimes produced, but we must remember that Fowler told us that one hundred parts of alcohol will do away with the effects of carbolic acid. The writers on surgery and the writers on toxicology do not speak nearly as much of the antidotal properties of alcohol to carbolic acid as they should. In these days of abdominal surgery a great many men operate in the way of a grand-stand play, and are putting away carbolic acid, which they should not do. I was east three or four weeks ago, and I saw a surgeon operate, and he does not use carbolic acid at all in appendectomy. He has done away with it entirely because he can shorten his operation about thirty seconds on the people who hold a watch on him, and he would rather have a case of infection than lose those thirty seconds. He speaks doubtfully of the use of carbolic acid in erysipelas. I think the majority of surgeons use carbolic acid in erysipelas, which can be practically aborted by the use of pure carbolic acid followed in a few seconds by 95 per cent alcohol. It has been done time and time again, and I have yet to hear a surgeon report a failure in the use of carbolic acid in erysipelas in the last three years.

There is a point about carbolic acid which does not belong in the discussion of the doctor's paper, except that it gives me a chance to speak about it, as alcohol has been mentioned, and that is about the use of alcohol wherever there is any burn from the use of carbolic acid. No matter what kind of a burn it may be it will neutralize it. Sometimes a little child has taken an unknown quantity of carbolic acid, and when alcohol was administered it recovered.

DR. T. C. CLARK (Stillwater): This is an important

point. Whether alcohol does neutralize the action of carbolic acid came to my attention where carbolic acid and alcohol had been taken at the same time. It was a recent case in our town in which a man took an unknown quantity of carbolic acid, probably from half a dram to not to exceed a dram, taken in whisky, not with suicidal intent but by mistake, death ensuing in fifteen minutes after he had taken the carbolic acid. The post mortem revealed the fact that there was no smell in the mouth. The post mortem also revealed no marked burning except where it passed into the stomach. There were one and one-half pints of fluid in the stomach, and it was fair to suppose there was considerable whiskey in the stomach and the least water, and there was a strong smell of carbolic acid. The length of the period between the time it was taken and when death ensued is not known, but it was estimated at fifteen minutes, and I should judge by the smell and the condition of the stomach that there was not over a dram of carbolic acid. The carbolic acid was well covered with whiskey, the mouth was not burned and the esophagus very little.

There was another case in which a mother gave her daughter carbolic acid in place of castor oil. A young man had presence of mind enough to call their family doctor, and in the meanwhile gave her some sweet oil, of which she took a quantity. It was several hours before her stomach was emptied of the carbolic acid, and she made a good recovery. In the last case the stomach was coated with sweet oil, and in the first case it was mixed with alcohol, and death was sudden. It is a very important point to determine whether alcohol will neutralize carbolic acid, or whether something in the nature of oil can be used with better effect. To my mind it is not clear that alcohol is an agent that neutralizes the effects of carbolic acid in the stomach.

DR. J. W. ANDREWS (Mankato): I would like to have Dr. Stewart explain whether or not it is safe and wise to use pure carbolic acid and neutralize it with alcohol upon flesh wounds that had become infected by something passing over them; for instance, in opening the abdominal cavity the pus having come in contact with the walls of the abscess.

DR. ARNOLD SCHWYZER (St. Paul): I have very little to say on the subject proper, but regarding the question of taking whiskey or alcohol after swallowing carbolic acid, I think that is not in the same line with the action that carbolic acid has on dry tissue. As soon as it comes into the stomach it meets more or less moisture, and therefore the only thing and the best thing we can do, in my estimation, is to get it out as soon as possible. Alcohol would not do much good in the stomach. The stomach-tube would do more good.

Dr. Andrews asked about the effect of carbolic acid on tissues that were raw. I think Dr. Stewart brought that point out, and he has beautifully covered the subject. There is an important point, if we have a deep seated and suppurative process and we have to go through healthy tissue, many of our best men are afraid to go through the large layers of healthy tissue.

DR. J. W. ANDREWS: Will alcohol injure the tissues?

DR. ARNOLD SCHWYZER: Not in my experience. Sometimes we have almost ridiculous surgical cases. Carbolic acid on a boil will go away down to the center, and it will heal up in the nicest way possible. We can stop it at any stage. I have little to say on the subject, except to support the points Dr. Stewart has brought out. In regard to injecting carbolic acid into cavities, some of us are a little differently inclined, but the effects remain the same.

DR. J. CLARK STEWART (Essayet): I wish to say

just a word in regard to Dr. O'Brien's reference to erysipelas. The question was in regard to pure carbolic acid. I use it by injecting five per cent in front of the advancing line. As to the effect of pure carbolic acid in erysipelas I have my doubts. Erysipelas

involves the whole depth of the tissues and is not amenable to carbolic acid. I do not know whether we can abort a case. Dr. Gaston used in erysipelas cases the tincture of chloride of iron. He says erysipelas does not care to remain in tincture of chloride of iron.

EXTIRPATION OF THE FAUCIAL TONSIL: TECHNIC OF THE OPERATION*

BY FRANK C. TODD, M. D.

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MINNEAPOLIS

Surrounding the entrance to the throat will be found a ring of lymph follicles, some in the nasopharynx at the base of the tongue and between the pillars of the fauces on either side. The last named are commonly known as tonsils. While the adenoid tissue in the pharyngeal vault is called Luschka's tonsil or the pharyngeal tonsil, and the lymphatic glands at the base of the tongue lingual tonsil, yet the common meaning when the word tonsil is used, and the only one known to the laity, is the faucial tonsil.

Having a specific name the laity, and even the profession, find it hard to believe that these glands have no more important function to perform than other lymphatic glands; that they are only a small part of the great lymphatic system, an aggregation of from ten to eighteen lymph follicles; and that their absence is therefore not noticed in the human economy. They are looked upon as an organ much like the kidney, and patients dread to dispense with them somewhat as they would with the latter organ, excepting that the operation necessary to remove the latter is attended with more difficulty and danger. Not that normal lymphatic follicles between the pillars are not of benefit, just as they are in any other portion of the body, but, being such a small part of the lymphatic system, the removal is of a comparatively small portion, and when absent, their function is performed by other contiguous lymphatic glands, and, too, there are other structures which have bactericidal properties in this region (as pointed out by Ballenger), namely, the serous and mucous secretions, the mechanical barrier afforded by the epithelium and basement membrane, resistance of the endothelial lining of the small blood vessels, and, finally, the phagocytic action of the white blood corpuscles; con-

sequently when the tonsils are completely removed the patient notices no ill effects, nor are there any so far as has been determined. Of whatever value the tonsils may be when in a healthy state, their function ceases when they are diseased, and they then become a menace to the patient's health, in order to restore which their complete removal is necessary.

Hypertrophy of the tonsils results from frequently repeated, acute, inflammatory attacks, or long continued inflammation, and, to add fuel to the flames, pockets or crypts form, which serve for the retention of putrefying food. The tonsil has no power to expel these masses, and they form an excellent nidus for the growth and development of bacteria. These infected masses not only keep the tonsil in a constant state of mild inflammation and affect the general health by toxemia, but occasionally subject the patient to storms of acute tonsillitis or quinsy, and they also cause an annoying bad breath, which the patient is unable to account for and less able to relieve. The infection is fed to the surrounding mucous membrane, giving rise to pharyngitis, and involvement of the Eustachian tubes and middle ears, causing deafness or a middle ear abscess, with its often fatal sequelæ, or, traveling downward, causing laryngitis, tracheitis, or, by way of the esophagus, chronic gastritis.

The voice may be affected on account of secondary inflammatory involvement of the larynx, or by the presence of these large masses, when the tonsil is much hypertrophied, in the throat, or, even if not hypertrophied, because of interference with the muscles of the fauces by the adhesions which have formed between the tonsils and pillars. Not infrequently we find patients complaining of a pain located in the region of the Eustachian tubes. They speak of it as pain on the sides in the neck, which is not severe, but chronic and an-

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noying. There may also be soreness due to secondary involvement of the lymphatic glands of the neck.

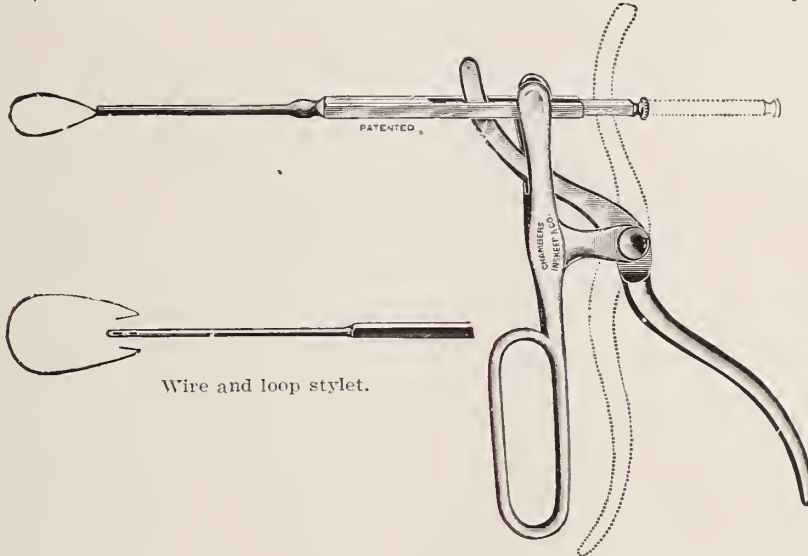
Tubercular infection of the glands of the neck and tuberculosis of the lungs and other organs not infrequently finds its mode of entrance by way of the tonsils, either as the primary infection or, secondarily, serving then as a distributing agent.

Dr. Geo. W. Wood, in a paper read before the laryngological section of the A. M. A., June, 1904, has reviewed the experiments of others respecting tubercular involvement of the tonsils. In 136 cases of pulmonary tuberculosis it was found that the tonsils were tuberculous in 69 per cent. He showed by his statistics that primary tuberculosis of the tonsil occurs frequently, particularly in children. Collecting the statistics of many observers, he found that in 1,671 cases in which the tonsils

provided for bacilli to gain access to the sub-epithelial tissues." Dr. Wood performed some experiments upon five pigs, rubbing in their throats a cotton swab saturated with bovine tuberculosis; later the pigs were killed, and post-mortem examinations made, and it was found that there was present tubercular infection of the cervical lymphatics in every case, and pulmonary tuberculosis in all, except one which had been killed before the lungs became involved.

He calls attention to the fact that practically all of the lymph of the head and neck empties finally into the internal jugular chain of glands, and that the cervical lymphatics become a repository for the germs, from which they enter the blood and are conveyed by the jugular trunks directly to the lungs.

Upon examination of the patients suffering from diseased tonsils we may find one of two



One-third actual size.

were examined for tuberculosis it was found present in 5.2 per cent. As a result of his experiments and his studies, Dr. Wood says: "I believe that in about 90 per cent of tuberculous infection in the glands of the neck the tonsils are the portals for the infection," and, he adds: "It seems scarcely probable that in tuberculous adenitis the tubercle bacilli ever gain entrance through the intact normal mucosa of the pharynx. The epithelium covering the mucous membrane of the mouth and throat is of the squamous pavement variety, and is especially adapted as a protective covering. The surface of the tonsillar tissues is covered with the same epithelium, but in the invaginations which form the crypts the epithelium becomes so differentiated that its normal protective function is lost. In no other place in the throat is so good an opportunity

conditions: either a large hypertrophied tonsil bulging out beyond the pillars, and this mass will usually be found thickly studded with crypts from which putrefying food is exuding, or which can be discovered by wiping out the crypts with a cotton-tipped probe; or we shall find what Pyncheon has named the submerged tonsil. This cannot readily be seen when inspecting the throat until the patient gags, when it may be thrown into view, or it may be seen by displacing the anterior pillar. It will be found diseased and containing the crypts. Often upon removing the entire tonsil in this submerged variety we find that it is really hypertrophied and quite large. It has appeared small because bound down by adhesions to the pillars.

The question may be asked as to what would be considered the normal condition, and

as to how often it is found present? In the normal condition we would find by inspection with the mirror, or when the patient gags, a small amount of tissue which is smooth and often arranged in folds, covered with healthy mucous membrane. In this mass will be found no blind pockets or crypts. It is my belief that these crypts develop only as a result of disease and hypertrophy, and that they are produced by the adhesions which take place between the hypertrophied masses, the adhesions not being complete, giving rise to the formation of cavities or crypts. The structure of hypertrophied tonsils bears out the fact that these crypts are present only as a result of disease, for they are not only on the surface of the hypertrophied tonsil, but will be found all through it, sometimes communicating with others and sometimes entirely separated. They are irregular in shape and size, and often, as a consequence of necrosis, the interior of the tonsil will be found quite hollow, but filled with a putrefying mass. After the development of these crypts by retaining the putrefying food and bacteria, they provoke further disease and hypertrophy. The writer has examined the throats of patients not complaining of any symptoms referable to the tonsils, but consulting for other troubles, with a view of determining how often the normal condition is present, and has found that it is present in a great majority, probably over 75 per cent of patients living in this climate. In many such normal throats the patients apparently have no tonsils, that is, they are not seen when the throat is in repose, and there is a sunken space between the pillars.

Tonsillotomy.—All practitioners must have been impressed with the fact that while many patients are relieved after a tonsillotomy, many others are not even temporarily relieved, or they suffer from a recurrence of the symptoms and often a recurrence of the growth. This is only to be expected after removing a portion of a diseased structure, the condition remaining much the same as before the operation. Hypertrophy continues, and other structures are involved as before. When a large portion of the tonsil has been removed with the tonsillotome, the results are more satisfactory, and may cause permanent relief.

Illustrative of this point, I briefly report the two following cases, and there are many more on my records:

F. C., aged 11, suffering from recurrent attacks of tonsillitis, was operated upon by the writer in 1897, using the Mathieus tonsillotome. A large section of each tonsil was removed, and the patient told to come back if she had further trouble at any time. In 1904 she returned, hav-

ing had recurrences of her trouble. Inspection showed hypertrophied tonsils, putrefying masses, etc. Under cocaine anesthesia, following the method described below, the tonsils were extirpated, with complete and permanent relief of symptoms.

M. P., aged 11, hypertrophied diseased tonsils, subject to frequent, often monthly attacks of tonsillitis and quinsy. Mother objects to the administration of a general anesthetic, patient would not be able to have extirpation performed without general anesthetic, and patient was ill so much with tonsillitis that something had to be done, and the family physician, therefore removed a portion of both tonsils, with Mathieus tonsillotome. This was done in January, 1905. In March she consulted me. I found the left tonsil much swollen and whole area full of pus. On lancing with bistoury there was an escape of large quantities of thick creamy pus. I had operated upon this little girl's brother, who was in a like condition and suffering in the same manner, in June, 1904, performing complete extirpation, with no recurrence. This same operation will have to be performed on this patient.

Tonsillectomy or Extirpation.—The rational treatment of diseased tonsils can consist only in the extirpation of the entire mass, and so far as the ultimate results are concerned it matters little what method is used. I have performed 272 extirpations, and have not, in any case, regretted the operation, though, on the other hand, when in former years I practiced tonsillotomy, I had much trouble with a recurrence of the growth and lack of relief of the symptoms for which the operation was performed.

Perhaps the first to practice total extirpation was Pynchon, who did it by the use of the galvanocautery under cocaine anesthesia. His results were successful, but required patience on the part of the operator and the patient. He divides his operation into two parts: At one sitting by repeated short incisions, using sharp electrodes, he severs the upper half of the tonsil, leaving the lower half to be removed in about two weeks, in the meantime treating the throat daily. This lengthens the time of convalescence and the period in which there is a painful throat.

Ingalls employs a pair of forceps to encase the entire tonsil, and after dissection of the pillars he uses the wire snare. There is also the method of Dr. C. M. Robertson, of Chicago, who has devised some ingenious right and left scissors, the tonsils being dissected out from above or below. These will accomplish the object well, and have been used by the writer with success. The disadvantage is that there is more hemorrhage than from the snare. Dr. Rhoades has devised a punch which removes the tonsil piecemeal, and should be of value in the removal of

fragments. There are various knives which have been devised by Kyle, Pyncheon, and others for the removal of tonsils. Dr. Ballenger has devised an ecrasseur to be used in the removal of the entire tonsil. It would seem to the writer to be very effective, and to have many of the advantages of a snare.

I became convinced of the necessity for a more complete operation some years ago, and began the use of forceps to pull the tonsil into the ring of the tonsillotome in order to secure a large amount, and was more successful, but the adhesions to the anterior pillar prevented the entire removal, and, on the other hand, the hemorrhage resulting was often severe. Many operations were performed in this manner, however, until when, on a good patient who was able to control his throat, a perfect enucleation was made. Under local anesthesia with dull instruments the tonsils were peeled out. In this case the tonsils were large and solid, and there was almost no bleeding. Later the Peters snare was used, but the annoyance caused by threading the wire was such that the tonsillotome and scissors were again resorted to, and when Robertson's scissors were brought out they were used for a time.

The method which I have found most successful and now practice is as follows: In nearly all cases a general anesthetic is administered, and those operations performed under a local anesthetic are upon adults or older children who have good control. In such cases the tonsil is anesthetized with a 10 per cent solution of cocaine. The crypts being cleaned out, the cocaine is swabbed repeatedly into these holes after using adnephren, as I have found the contraction of the blood vessels helps to prevent the toxic effect of the cocaine. Even when cocaine is used certain portions of this operation are apt to be painful. When the patient is under a general anesthetic the head is dropped over the end of the table, and the operator sits upon a stool facing the patient's face, which is exactly upside down. Strong direct daylight is used, the mouth gag is inserted, the patient's tongue is held by an assistant standing at the side of the table, the tonsil is grasped with the tonsil forceps, and with tonsil knives the anterior pillar is dissected loose from the tonsil, care being taken not to injure the pillar, for it is from the pillars that most cases of hemorrhage arise, and it is not desirable to injure these muscles if we would secure perfect results. With a pair of slightly curved scissors the tonsil is separated above and below, and being all the time pulled out with the forceps, the forceps are then released and the Kratzmuller cold-wire snare applied. This snare is a modification of, and much improved over the Peters snare, having a long canula through which moves a stiff piece in the end of

which are two holes for threading the wire. This allows of rapid replacing of the wire loop. After placing the loop over the tonsil, the tonsil is pulled out with the forceps again and well into the snare. An assistant aids further by exerting pressure from the outside on the neck, thus pushing the tonsil into the snare. The tonsil by this time is only attached by a pedicle, and by rapidly bringing the handles of the snare instrument together the wire is brought into the canula, and the tonsil is thus peeled out. If the technic is perfect the entire tonsil is enucleated, the back surface being smooth and covered with membrane, as shown in specimens. If a portion remains it should be pulled into the snare and removed, but this should not be necessary if the operator has been careful.

Hemorrhage.—There is less hemorrhage than with the tonsillotome or scissors, as the tonsil is peeled out with the snare. If the pillar is cut with the knife or scissors (an accident that need not occur) there may be bleeding, and if it is severe it may be stopped by ligating the pillar. The position of the patient's head during the administration of a general anesthetic causes the blood to flow out of the nose and the roof of the mouth, from which it is swabbed, and hence there is no danger of the blood flowing into the larynx. We use chloroform or ether, but I prefer the former because there is less annoyance with secretions in the throat. Much depends upon the anesthetizer, because the patient must be asleep while the tonsils are being removed, and the anesthetic cannot be given when the surgeon is operating. With an expert I find that the operation is not only much less difficult, but I feel that the danger is eliminated. I do not favor having chloroform given by one who is inexperienced in its administration in any kind of an operation, but much less in this operation. Dr. Cora Roberts, who is the official anesthetist at the Northwestern Hospital, performs this function for me, and she manages to get the patient asleep enough so that one tonsil can be completely dissected from the pillar; then a little more chloroform may have to be given while the throat is sponged and the instruments changed, after which it may be snared with perfect success, allowing all the time necessary for a complete dissection; and then, while waiting a few minutes for the cessation of the bleeding and the threading of the snare with another wire loop, enough more anesthetic may be administered to complete the dissection of the other. If adenoids are also to be removed there is ample time to completely and thoroughly remove them without any additional chloroform; but when the adenoids are removed it is wise to have an assistant hold the patient firmly, as he may move during the last stages, though he re-

mains unconscious. In fact, it is desirable that his reflexes return during the adenoid operation.

In conclusion, I beg to emphasize the following points:

1. The tonsil, in the sense in which that term is generally applied, really is a neoplasm, and not an organ with a definite function.

2. In the normal condition there apparently is no tonsil present, though in such normal cases there exists an aggregation of from ten to eighteen lymph follicles.

3. When this mass of follicles develops into a larger mass, with the formation of crypts, etc., we have present what is generally understood to be a tonsil, and this is a diseased structure resulting from disease.

4. Such tonsils are detrimental to the patient's health.

5. Being diseased and causing disease, they should be removed entirely, and not in part, as otherwise the object sought is not obtained.

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DISCUSSION

DR. CHARLES N. SPRATT (Minneapolis): I think Dr. Todd is to be congratulated upon his paper in setting forth that the tonsillotome is not the only instrument used in removing tonsils. In adults the cold snare should always be used. During a term in the hospital in New York I had nearly a thousand operations, and in the cases of children three or four years old I had a number of cases in which there was moderate hemorrhage, and in sixteen cases we had very severe hemorrhage. Those cases, however, were stopped with pressure. I remember a physician in New York telling of a case in which he kept the clamp on for two days. The instrument generally to be used in children I think is a matter of choice. We never had any special trouble about recurrence. In the New York Infirmary I do not think I saw a snare used, and in Boston I do not think I saw a tonsillotome used. In regard to the use of chloroform, I do not agree with Dr. Todd. I think chloroform is a dangerous drug. It is especially dangerous to children. Ether is a safer drug, and should always be used.

DR. E. J. BROWN (Minneapolis): I have very little criticism to offer upon Dr. Todd's excellent paper. I agree with Dr. Spratt that chloroform should never be used in the removal of a tonsil. As to the use of ether for primary anesthesia; the use of two or three drams of ether by the drop method is sufficient to produce anesthesia. I have used in the last several years the free wire snare repeatedly. I regard it as a much better instrument than the one to which Dr. Todd refers. I have very little difficulty in adjusting the wire, and it

seems to me to be a very much more servicable instrument. I use a No. 10 piano wire. I have not used the tonsillotome in the removal of tonsils. It may be justifiable to use that instrument in young children when the tonsils are large and protruding, but it is never justifiable in adults. I do not believe enucleation of the tonsils should be considered an operation in which it is safe to do a heavy operation. The thorough enucleation of the tonsils comes very near being a major operation. I do the operation at my office sometimes, and occasionally I go to the house of the patient and to the hospital. A few weeks ago I spent a night with a patient, but that rarely occurs. I do not believe, however, it is a wise or justifiable procedure to remove both tonsils at the same time. It is a sufficiently severe operation to enucleate a tonsil and do it thoroughly on one side.

DR. W. H. AURAND (Minneapolis): I appreciated the paper very much that Dr. Todd read. He gave us clearly and distinctly to understand that in a diseased tonsil the only thing to do is to remove it, and not to wait until the patient is poisoned with the disease. The only thing I use is the tonsillotome. I have never used the snare. In children under fifteen years of age I use an anesthetic. I use chloroform, but I do not put the child entirely under its influence, and I remove the tonsil clear and clean, and I rarely use the forceps. In place of using the forceps and trying to tie the artery I use torsion, and in less than five or ten minutes the hemorrhage stops. Everybody will tell you not to remove tonsils, that you are doing a great harm. We know that there are nearly always adenoids present. I use chloroform, but I don't put on enough to make it dangerous. I have had only one hemorrhage and I stopped that with torsion.

DR. H. L. TAYLOR (St. Paul): I simply wish to say that I use much the same operation as Dr. Todd described, except I use the forceps and the snare in what Ingalls calls his bloodless operation; even after the tonsil seemed clear I have had some tremendous hemorrhage. If you use the snare and imagine you will have a bloodless operation you will find you are mistaken.

DR. FRANK C. TODD (Essayist): In regard to Dr. Brown's remark that this is a major operation, I agree with him perfectly, and I give an anesthetic, yet I do not want to subject my patient to two operations when one will do the business, and I look upon it as a major operation in a sufficient degree to make it a hospital operation in all cases or to have the patient at the hospital at the time of operation. Regarding the selection of an anesthetic; this is an old subject which it would take a great deal of time to discuss. It is my habit in having a patient given an anesthetic to use chloroform when I have a good anesthetizer, and ether when I have one who does not know how to give it. It depends upon the one who gives it rather than upon the anesthetic. In regard to hemorrhage; we do have hemorrhage in the removal with the snare, but not as severe as with the tonsillotome. If we have some hemorrhage with the snare we have much more with the tonsillotome.

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INSURANCE EXAMINATIONS

County societies throughout the Northwest are agitating the fee system for insurance examinations.

The various organizations which have discussed the subject are fairly united on the five-dollar fee for old line companies and a two-dollar fee for fraternal companies. Some societies insisted upon a ten-dollar fee where a microscopic examination is made.

It is safe to assume that the minimum fee will be generally adopted and accepted for such examinations as demand a minimum amount of the physicians' time. It is also safe to assume that the examination will be conducted in the most superficial manner: a counting of the pulse-rate and the application of the ear on the clothing of the applicant.

Physicians who are conscientious in their examinations will strip the patient and attempt a scientific investigation of the thoracic and visceral organs, no matter what the fee may be. The temptation is strong, however, to give but little

time and no special care to the companies that pay the small and inadequate fees. It would be a far better and a more dignified course to pursue if the medical man would refuse to accept an appointment as examiner for a company that underpaid its examiners.

In the smaller towns competition and incompatibility is a powerful factor and it is difficult for the younger practitioners to resist the alluring title of examiner for an insurance company. With the better organization and mutual understanding which is so rapidly spreading among medical men the question of fees will be more readily adjusted. Good men are wanted by all old-line companies, and the weaker men will be weeded out of the field of examiners.

The justice of the claim of physicians for reasonable fees will soon be recognized, and if physicians' rights are not recognized in time, they must unite and firmly demand their rights. The opinion of a medical man when a life is to be insured is valuable, and just compensation must follow if the medical profession are to unite on a standard of fees.

If every county society in the state would continue to urge its members to stand together on this question, the State Association would undoubtedly pass a resolution, or at least go on record, for a better fee for all insurance work. Unless the county societies are active, the same old schedule will prevail. The cost of living has increased very materially in the past two years, and physicians feel the strain from many standpoints, hence it is only just that the commercial side of the profession should be fully considered.

PHYSICIANS' FUND FOR CALIFORNIA

The destitution among the San Francisco physicians is so great that we who are safe and secure in our homes and offices cannot appreciate the suffering of our California brethren unless we picture some friend in a similar predicament.

The medical men who were burned out not only lost their office equipment, but are practically out of practice with nothing but charity work in view for a long time. Imagine a busy practitioner suddenly deprived of his home and in-

come is a desolate city, his patients ruined, and his practice swept away!

The money raised among Minneapolis physicians was wisely placed with the general fund for immediate relief of all sufferers. Now is the time to extend special aid to a physicians' fund. Every county society should call for a special assessment, every state association should appropriate a generous offering from its treasury, and every individual physician should deny himself in order to help the San Francisco physicians.

The Journal of the A. M. A. has started a subscription list and so far \$4,244.00 has been subscribed.

Think of this insignificant amount among several hundred physicians! Let us send in contributions before it is forgotten and do not let this awful catastrophe pass out of our minds before making generous financial aid to these many almost ruined physicians.

It will be years before many of them will be able to make a living or recover their former properties. Doubtless many are permanently ruined.

All contributions will be distributed by the officers of the county societies in order that no injustice may be done. There will be no irregularities and no money will be wasted.

Think it over and send in your proportion, no matter how small the amount. It ought to be possible to raise a million dollars in the United States from physicians to physicians.

THE BELLMAN

Under the above title, as announced in our advertising columns, the Northwest is to have a weekly publication whose coming, and whose presence, every thoughtful, intelligent man may heartily welcome. In the rush of the past few years in the building of a new empire we seemed to have forgotten that something besides the daily paper is both desirable and essential to such an empire as we have helped to build in the Northwest. We are making no plea for a provincial literature, but a journal that savors of our local life, that meets our needs, that sings our song, will have a greater influence on the larger

life that we are just beginning to live than is possible for any journal published in Boston or New York. Such a journal can and will prevent our becoming provincial, and we hail its establishment, based upon a well-grounded hope of success, as the best evidence of a right trend in our Northwestern life.

This new journal is not an experiment to be made by visionaries, but is an undertaking by a man who does things—who makes things come to pass, both in a literary and a financial way. Its editor, Mr. William C. Edgar, has accomplished upon which to base his promise that he will give us a *bellman* who will ever ring true.

The time is ripe for such a journal, the man behind it has proven his worth and ability, and the price (\$4) is none too large. Our space is too limited for mention of the details of the enterprise, but we are glad to be able to assure our readers that the financial standing of the company is a guarantee against loss to subscribers.

And now let us not forget that the success of the undertaking depends solely upon the loyalty of our best men to our best interests, and so we bespeak for Mr. Edgar and his associates very cordial support from the medical profession of the Northwest.

A WORD TO OUR CONTRIBUTORS

We assume that every one who writes an article for publication desires to have the printed article free from errors—errors of spelling, capitalization, punctuation, grammatical construction, etc.; and we are sure, speaking from long experience, no office can bring about this desirable end without the co-operation of the writers themselves. We cordially solicit such co-operation from our friends, and that it may be effective, we ask their attention to some of the simple details of preparing copy and putting the same into type.

Two of our modern improvements are the typewriting and the typesetting machines. Most of our contributions are typewritten; and for this the editor, "the reader" (the man who prepares the copy for the printer), the typesetter, and the proof-reader are grateful indeed. But in the process of typewriting most matter gets woefully

mixed up, and if the author has had no experience in reading proof or manuscript for errors, he will overlook the most glaring errors in his own typewritten article. In this form the manuscript comes to us, and the process of editing begins. The editor, a busy man, must read the manuscript, and it then goes to "the reader." If the author's meaning is clear, the minor errors of composition are easily corrected, but if the meaning is obscure the process of editing is brainracking, and when technical terms and proper names are so spelled or written as to bear no resemblance to anything in dictionary or directory, our troubles begin. It is somewhat singular that men who pride themselves on their handsome penmanship write about all technical and proper names so that no one can read them; and it is all too common for author and typewriter to leave neither space between lines nor side margins sufficient for the "reader's" annotations.

If the manuscript has been carefully prepared, it goes to the typesetting machine, and it may fall into the hands of a man who never saw a medical term. Imagine such a man, as a typewriter, wrestling with *macroscopic* or *Langerhans*, or *Neusser*, or *Hurry Fenwick* in the handwriting of the average physician.

Every technical term and every proper name should be so plainly written that a child may read it, and no typewritten paper should leave an author until all such terms and names are properly written.

When a proof is sent to the author it is not expected that he will detect all the typographical errors, for it is our work to look after these, but the author should see that his meaning is clear, and that all proper names and technical terms are printed correctly.

In the modern typesetting machine office, many compositors are employed, and consequently none of them become experts in setting up technical papers, and so it is quite important that all manuscript be either typewritten or that the penmanship be so plain that every letter in a technical word can be read out of the context.

We are well aware that many typographical errors appear in our columns, but we do not believe our readers realize the amount of labor

that every editorial office expends to avoid mistakes in its journal. A brief statement of the course of an article may not be without interest. When a manuscript is received, it is very carefully read and corrected, and made to comply, in spelling, etc., with the style of the office. The first proof is read by an expert proof-reader, assisted by a copy-holder. Three revised proofs are sent to us. One is read in this office, one is sent out to an expert medical proof-reader, and one goes to the author. The corrections made on these three proofs are transferred to one sheet and these corrections made, when the article is "made up" into pages, and a page proof is again read in this office, thus the manuscript is carefully edited, and the proof is read five times.

If, in spite of so much labor, mistakes occur, may we not ask our friends to do all they can to prevent them?

PRESCRIBING COCAINE

The law of Minnesota attaches a severe penalty to a violation of the act relating to prescribing and the sale of cocaine or any of its compounds. It is unlawful for a physician to prescribe cocaine for any person addicted to the use of the drug, and there are but few druggists who will dare sell the cocaine without a prescription. As it is well known that cocaine users are very numerous, we may well wonder how they get the drug. To be sure, the profit in its sale is large, but the class of people who use it are about as objectionable to a decent pharmacist as would be the habitual drunkard who wants to stand in front of the counter and take his hourly drink.

If the least responsibility for the continued sale of cocaine attaches to the medical profession, it is high time that the responsibility be known, and drastic action be taken to correct the abuse.

We plead for light from the pharmacists.

LEST YOU FORGET

The State Medical Association meets in Minneapolis, Wednesday, June 20. It will be one of the most important meetings in the history of the Association. The attendance should be large.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular meeting of the Academy was held at the Commercial Club, St. Paul, Wednesday, April 4, 1906. There were thirty-nine members and three visitors present.

In the absence of both the president and the vice-president, Dr. Lee, of Minneapolis, was chosen chairman pro tem.

Dr. Haldor Sneve presented skiographs of a case of osteitis of the ankle, of a case of division of the nerve in the arm followed by the loss of some of the terminal phalanges, and of a third case showing delayed union in a fracture. He also exhibited a large osteophite that he had removed, post mortem, from the falx cerebri.

Dr. H. P. Ritchie reported a case, and exhibited the specimen, of appendicitis complicated by large hydrosalpinx with twisted pedicle in a girl 20 years old.

Dr. J. L. Rothrock read a paper entitled "The Significance of Pain in Gynecological Diagnosis." The subject was discussed by Drs. A. W. Abbott, Benjamin, Sneve, and O'Brien.

Dr. Gustav Schwyzer, of Minneapolis, read his inaugural thesis entitled "Surgical Affections of the Patella." The discussion was led by Dr. Moore followed by Dr. Mann, and by Dr. Schwyzer in closing.

ARTHUR W. DUNNING, M. D., Secretary.

CAMP RELEASE DISTRICT SOCIETY

Camp Release District Medical Society held its regular quarterly meeting at Madison, Minn., May 3. President D. N. Jones, of Gaylord, in the chair.

Dr. O. S. Hutchins, of Canby, and Dr. Ludwig Lima, of Montevideo, were elected to membership.

The following resolution was adopted:

Resolved: That the fees for life insurance examinations made by members of this Society shall be—

Five dollars for each ordinary examination including urinalysis.

Ten dollars for each examination where microscopic examination of urine, sputum, or other excretion, is required.

Three dollars for each certificate of health for renewal of a lapsed policy.

Resolved: That each member be requested to sign the following:

The undersigned physicians, members of Camp Release District Medical Society, and registered

and practicing in Renville, Chippewa, Lac qui Parle, Yellow Medicine, and Sibley Counties, Minn., believing that the duties of an insurance medical examiner require a high degree of professional skill, absolute integrity, and special attention to the interests of the insurance company, do hereby pledge themselves to exercise skill and care in all examinations and to make no discrimination in the examinations or fees to different companies. They further agree to be governed by the above schedule of fees.

The Delegates were requested to bring the matter of fees for life insurance examinations before the next meeting of the State Association, also the matter of a certificate of membership for members.

The next meeting will be held at Ortonville.

The following papers were read:

"Gonorrhoea," by Dr. N. A. Nelson, Dawson; "Appendicitis," by Dr. H. Duncan, Marietta; "Retroversion of the Uterus," by Dr. D. N. Jones, Gaylord; "Placenta Previa," by Dr. E. O. Giere, Madison.

R. D. ZIMBECK, M. D., Secretary.

HOUSTON-FILLMORE SOCIETY

The Houston-Fillmore Society met at Houston, May 3rd with a large attendance, and all had an enjoyable time.

An address on organization by Dr. McDavitt, of St. Paul, was very instructive and inspiring.

A paper on management of ordinary labor as followed in 301 cases, with results, was read by our president, Dr. Browning.

The report of four cases of membranous conjunctivitis, by Dr. McDavitt, with discussion, followed.

The question of reduced fees for old-line life insurance examinations was brought up, and the Society unanimously voted for a minimum fee of \$5.00 for old-line, and \$2.00 for fraternal companies, and the secretary was instructed to notify the insurance companies and all physicians residing in the two counties, also to request our Delegate to use his influence to have similar action taken by the State Association.

A banquet was given the Society by Drs. Fisher and Onsgard. Music by an orchestra and vocalists added to the enjoyment.

G. R. REAY, M. D., Secretary, pro tem.

HENNEPIN COUNTY SOCIETY

The monthly meeting of the Hennepin County Society was held on May 7th. Dr. F. C. Todd, the president, in the chair, and forty others present. The following resolution was adopted:

Resolved, That our delegates to the next meeting of the State Association be and are hereby instructed to call the attention of the House of Delegates to the evident and unjust discrimination against lodge physicians and in favor of corporation surgeons as incorporated in the by-laws of the State Association, Chapter 9, Sec. 15, and that our delegates are further instructed to propose such action in the House of Delegates as seems to them best at that time.

The following resolution was adopted:

"Whereas, There is now pending in the National House of Representatives a bill known as the 'Army Medical Reorganization Bill,' the intent of the bill being to increase the efficiency of the Medical department of the United States Army by eliminating contract surgeons from the army, establishing a Medical Reserve Corps, and increasing the rank of medical officers, thereby encouraging efficient and well equipped young physicians to enter the army. Therefore, be it resolved, That it is the sense of the Hennepin County Medical Society that every effort be put forth by the profession to secure the passage of this important measure, so vital to the efficiency of the army in order that the department as well as the medical profession, may be spared a repetition of the censure heaped upon both during the late war with Spain.

Resolved, That we earnestly entreat our representatives in Congress to use every honorable means to secure the passage of this meritorious measure, thereby insuring greater efficiency in the medical department of the army.

Resolved, That a copy of these resolutions be forwarded to Hon. Loren Fletcher, Hon. John Hull, chairman of the Committee on Military Affairs, House of Representatives, Senators Nelson and Clapp, and Hon. T. E. Warren, chairman of the Committee on Military Affairs, United States Senate."

Dr. C. H. Hunter then moved that the Secretary report the vote of our representatives on the above measure, which was carried.

The following physicians were nominated for membership: Dr. Ada E. Tolbat, Pillsbury Bldg.; Dr. Emily Fifield, Pillsbury Bldg.; Dr. H. M. Guilford, Pillsbury Bldg.; Dr. O. H. Bakke, 1525 E. Franklin Ave.

Amendment to by-law No. 19, as proposed at the last meeting, was adopted as amended by Dr. Nippert. As adopted it reads as follows:

1. Reading of minutes of previous meeting.
2. Presentation of clinical cases.
3. Report of Executive Committee, Censors, other committees.
4. Election of new members.
5. Nomination of applicants for membership.
6. Unfinished and new business, communications.

7. Reading of papers and their admission.
8. Presentation of specimens and report of cases.

9. Adjournment.

Dr. E. S. Strout moved that a vote of thanks be extended to Mr. C. H. Cirkler for his gift of several boxes of excellent cigars for the annual banquet.

Letters were read in regard to the Pure Food and Drug Bill, which were sent by Hon. Loren Fletcher and Hon. W. P. Hepburn.

The report of the Banquet Committee was read and approved.

Amount expended\$253.25
Amount received, tickets..... 252.00

Deficit \$1.25

The deficit was taken care of by the Committee.

The president reported the appointment of the following committee to arrange for the entertainment of the Minnesota State Medical Association.

Dr. A. E. Benjamin, chairman, Drs. J. G. Cross, G. C. Barton, G. P. Crume, and A. T. Mann.

Dr. L. A. Nippert then presented some very interesting cases. Two cases of visceral transposition and a case of aortic stenosis at the isthmus.

Dr. S. P. Rees presented a paper on "The Physical Findings in Growths of the Anterior Mediastinum," which was illustrated with sketches and gross pathological specimens and microscopical slides. The paper was discussed by Dr. Nootnagle and others.

Dr. H. B. Sweetser presented a paper on "Malignant Stricture on the Colon, with Special Reference to Diagnosis." The paper was discussed by Drs. Abbott, Bell and Nootnagle, and closed by Dr. Sweetser.

Dr. C. N. Spratt showed a human brain that weighed 74 ounces, which was removed from a patient who died of meningitis.

C. H. BRADLEY, N. D., Secretary.

NEWS ITEMS

Dr. C. T. Schroyer, of Baltic, S. D., has moved to Colorado.

Dr. E. M. Pierce, of Rugby, N. D., has moved to Grand Forks.

Dr. E. G. Sasse, of Excelsior, has located at Red Lodge, Mont.

Dr. Elmer E. Schafer, of Motley, died last month, at the age of 41.

Dr. W. T. Gleason, of Gladstone, Mich., will locate in Virginia, Minn.

Dr. J. F. McQueen has moved from Milton, N. D., to Moosejaw, Canada.

Dr. A. O. Arneson, of Aneta, N. D., is doing post-graduate work in Chicago.

Dr. George McManus, of Ellendale, N. D., will move to Crookston, Minn.

Work has been begun on the new Bethesda hospital building at Crookston.

Dr. J. E. Saunders has moved from Carson, N. D., to Glen Ullin, in the same state.

Dr. J. W. Robertson, of Litchfield, is making drawings for a \$20,000 hospital building.

Dr. Charles Weishaar, a recent graduate of the State University, has located at Britton, S. D.

Dr. George Tupper, of Thief River Falls, who has been critically ill, is reported out of danger.

Dr. Cameron Lohead, of New York City, has become a partner of Dr. I. W. Lynn, of Wales, N. D.

The Commercial Club of Rushford has undertaken to raise funds to build a hospital at that place.

Dr. M. McKinnon, who has practiced for eight years at Fosston, has moved to Sand Point, Idaho.

Dr. Clarence Schneider has located in Woonsocket, S. D., and will be associated with his father.

Dr. A. C. Bernays, of St. Louis, has dedicated a recent surgical work of his to Dr. Chas. H. Mayo.

The contract for Dr. Bray's new hospital building at Biwabik has been let. It will cost \$12,000.

Dr. John Baker, a recent graduate of the University of Lincoln (Neb.), has located at Ramona, N. D.

Dr. George Durnin, of Russell, N. D., will spend several months in the East in special study in surgery.

Drs. R. J. and D. F. Fitzgerald, of this city, have moved their offices from 128 Fifth St. So. to 111 Sixth St. So.

Dr. C. A. Boyd has decided to give up practice at Winona. He will rest during the summer and then settle elsewhere.

Dr. F. M. Manson, of Worthington, is building an addition to his residence which will be used for hospital purposes.

Dr. W. S. Anderson will move from Kennedy to Warren, and Kennedy will want a new physician. The opening is said to be a good one.

A branch of the Battle Creek Sanitarium will be established at Chamberlain, S. D., twenty acres of land having been bought for the site.

Dr. W. S. Fullerton, of St. Paul, was appointed by Gov. Johnson to attend the conference on medical education which met last week in Chicago.

Over thirty physicians in Minnesota and the Dakotas, not including St. Paul and Minneapolis, have bought automobiles within the past two weeks.

The City Hospital of Owatonna is having plans drawn for a \$10,000 addition to its building. Mr. Harry W. Jones, of Minneapolis, is the architect.

Drs. Helen and Jane Hughes, of Mankato, expect to move their maternity hospital to the down town district, and they are looking for a suitable building.

Dr. V. A. Siakin-Ross, who has resided in Yankton, S. D., for twenty-five years, and was once superintendent of the State Insane Hospital, will move to Sioux Falls.

The physicians of North Dakota will organize a state pathological society, and will furnish the money necessary to carry on the work until the next meeting of the legislature.

A St. Cloud paper announces that "Dr." A. M. Wilton, of Alexandria, will visit St. Cloud regularly each week, and treat nervous cases "mathematically," a new method just from Chicago.

At the last meeting of the Stearns-Benton County Society the following officers were elected for the ensuing year: President, Dr. C. A. Chilgren, Sauk Rapids; vice-president, Dr. O. H. Wolner, St. Cloud; secretary and treasurer, Dr. J. C. Boehm, St. Cloud.

The Training-School for Nurses of the Swedish Hospital of Minneapolis held its sixth annual graduating exercises on May 1, and graduated the following class of nurses: Ellen Ackerson, Lillian H. Ericson, Mathilda J. Osterberg, Ellien W. Berglinth, Ingeborg B. Karlsteen, Elin C. Edberg, Anna E. Swanson, Ida E. Thompson, Hannah F. Swenson, Marie E. Wester.

The "Bonesetter" who made Hudson, Wis., his home for several years, has a worthy successor in one John Thill, who calls himself the "Somerset Doctor." He is an unkempt, dirty specimen of humanity, and yet he has had as many as 150 patients in a day. He was tried last month by a "jury of his peers" for practicing medicine without a license, and was promptly acquitted. He makes no charges for his services, and so therefore claims that he does not "practice for a fee."

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I have used several bottles of your Uric-Antagon with great satisfaction, and think it will accomplish that for which it is recommended. Many thanks for the sample. Respectfully,

(Signed) J. Blackwell, M. D.

AFTER THE FIRE

The enterprise and courage of the members of the San Francisco drug trade were clearly

exemplified during the recent disaster. Before the fire was extinguished they placed large orders with the manufacturing chemists. One house ordered 30,000 pounds of Antiphlogistine, and altogether over 100,000 pounds were shipped to the coast upon order within a week.

On a steamer from New York, running up the California coast at the time of the earth quake, were 35,000 pounds of Antiphlogistine, and upon orders from the home office, the emergency hospitals were liberally supplied free of charge.

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You should investigate the plan of the Physicians' Defense Company of Fort Wayne, Indiana, for the successful prevention and defense of the malpractice suit. The records of the Company show that they have prevented all annoyance in over 75 per cent of all the suits threatened against their contract holders. The Company has an admirable history and has dealt fairly and honestly with the medical profession during the seven years of its existence.

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A VALUABLE CHART

The M. J. Breitenbach Co., of New York, publishes a Bacteriological Chart, in colors, showing sixty characteristic plates of pathological bacteria, the majority of which show the characteristic bacteria, with the distinctive stainings, magnified 1,000 diameters. It includes eight different plates of the ameba malarix, showing the organism at various stages of development, and in the different forms which it assumes in the various kinds of malarial fevers. In these particular plates, as well as those showing ameba coli, an even greater magnification is given.

The chart has evidently been brought down to a very recent date, as it embraces an admirable illustration of De Lisle and Jullien's bacillus of syphilis. The work is one of the most admirable pieces of lithographic production that we have ever seen emanate from an American house, and the fine gradation of color and variation in tints are so accurately reproduced as to make the chart of great value as well as one of an unusual degree of artistic merit. It is securely mounted in a form which enables the physician to suspend it for ready inspection. It is sent free upon application.

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STRANGULATED HERNIA

WITH REPORT OF THREE CASES OF INTERSTITIAL
HERNIA*

BY H. HOLTE, M. D.

CROOKSTON, MINN.

In preparing this paper I have endeavored to make a general review of the subject of strangulated hernia, and to present it in as concise a form as the importance of the subject will warrant. The subject is of great importance, and general practitioners, as well as the surgeons, should be prepared to recognize the condition, and to deal with it according to the best methods in vogue, whether it may be by manipulation or surgical means.

A hernia is said to be strangulated when it cannot be reduced spontaneously, and when the loop of intestine is so constricted that the circulation of the blood and the passage of the contents of the bowels are interfered with. This condition is rarely met with in childhood, but more frequently in middle life and in old age. Strangulation occurs more often in a small and old hernia than in the large and more recent ones. It is more common in crural than in any other form of hernia, due to the narrow neck of the sac. The risk of an inguinal hernia to become strangulated is 2.16 per cent, and the femoral 9.02 per cent. Strangulation increases in frequency from the age of 20 up to the age of 50 to 70, when proportionately the largest number occurs. Strangulation has been found to occur more frequently on the right than on the left side—a proportion of three to two. Of two hundred and seventy-six cases operated by Henggeler, at

Zurich, the proportion was 57.5 per cent of crural to 42.5 per cent of the inguinal hernia. In 51 per cent the contents consisted of intestine only, in 30 per cent of both intestine and omentum, and in 9 per cent lipomata were found.

Causes.—Predisposing causes of strangulated hernia are certain occupations that require severe muscular exertions, especially of the abdomen, pulmonary diseases, and constipation. Exciting causes may be mentioned. Anything that will cause intra-abdominal pressure, such as jumping, straining, lifting, coughing, and sneezing, and it may also be produced by a blow or a fall.

Local causes of strangulation are trauma from an ill-fitted truss, inflammation, bands in the hernial sac, torsion or volvulus of the intestinal loop in the sac, fecal impaction, adhesions between the sac and the gut of an irreducible hernia, or it may be due to a combination of causes.

Mechanism of Strangulation.—Various theories have been advanced from time to time to explain the way in which strangulation takes place. These theories have been summarized by Berger as follows: (1) Elasticity of the ring (elastic compression—Richter); (2) Compression of the efferent by the distended afferent ends of the loop.—(Lossen); (3) Angulation or sharp curvature of the distal end.—(Scarpa, Busch); (4) Valvular folding of the mucous membrane—(Roux); (5) Torsion of the imprisoned loop—

*Read before the Minnesota State Medical Association, June 1, 1905.

(De Roubaix); (6) Interposition of the mesentery—(Berger) (7) Fecal impaction.

The exact number in which strangulation takes place undoubtedly varies in the different cases, and in the majority of instances it is due rather to a combination of causes than to any single one. One of the more plausible theories that has been advanced as to how strangulation takes place is that of "venous engorgement." The walls of the veins are thinner and more easily compressed than the walls of the arteries, consequently the blood continues to flow through the arteries into the strangulated loop of intestine long after the return circulation has been cut off. This produces congestion of the intestinal loop, which is the first step in the inflammatory process. Edema beyond the constriction takes place, and serous fluid exudes into the sac. This increases the pressure in the sac to such an extent that reduction becomes more and more difficult or impossible. This condition may be aided by the violent peristalsis to force the contents of the bowels onward, which increases the pressure at the points of constriction.

Local Changes.—The changes which take place in the strangulated gut are congestion, inflammation, and gangrene. The rapidity of these changes depends on the degree to which circulation is interfered with. The bowel at first becomes of a bright-red color, later bluish, and just before gangrene sets in of a grayish-slate color. The period elapsing between the onset of strangulation and gangrene varies from a few hours to several days. Gangrene may take place in patches, or the whole loop may become gangrenous. The intestine becomes cold and flabby, and a bloody serum is excreted into the sac. This fluid often contains bacteria, but in the larger proportion of cases the fluid has been found sterile. When the wall of the gut has become gangrenous a migration of pathogenic germs, such as the colon bacilli, streptococci, and staphylococci, may take place, and local inflammation is developed. The wall of the intestine breaks down, and the bowel contents escape into the sac. An abscess develops, which may break through, forming an artificial anus, so that a spontaneous cure takes place. Such cures are rare, and can hardly be possible, except in a partial enterocele (Richter's hernia), as the time required for the tissues to break down to form an artificial anus would be too long for the patient to survive if the lumen of the gut should be completely obstructed. If the intestine within the abdominal wall is impaired inflammation may extend into the abdominal cavity, causing peritonitis if it is not checked or walled off by adhesions.

Symptoms.—The symptoms of strangulated hernia are divided into local and general. The general symptoms are those of acute obstruction

of the bowels. Vomiting is persistent, first of food, later of bile-stained fluid, and finally stercoraceous. Constipation is complete after the feces have been expelled below the obstruction, and no flatus is passed. The urine is diminished in quantity, due to the low arterial pressure. Indol, which is formed from albuminous compounds by fermentation, not being discharged from the bowels, is changed into indican, and is found in the urine; pain is severe and paroxysmal, often referred to the region of the umbilicus. At first there is a slight rise of temperature, later the temperature becomes subnormal, the pulse becomes rapid and wiry, the tongue dry, and the expression anxious. The distension of the bowels varies with the site of the obstruction. If this is high up the distension is slight, but if the lower bowels are involved, it may be pronounced. The surface of the body is cold and the extremities are clammy and have a dusky look.

Local symptoms at the site of the hernia are pain, tenderness on manipulation, especially at the neck of the sac, irreducibility, absence of gurgling impulse, and after the strangulation has existed for some time the tumor gives a flat note on percussion, due to accumulation of fluid in the sac. Death results from strangulation, on the average, in from five to seven days.

Diagnosis.—Whenever the symptoms indicate an acute obstruction of the bowels, and the diagnosis cannot be made as to the exact nature and location of the obstruction, all the hernial sites should be carefully examined, and none of the hernial orifices should be overlooked. For the sake of convenience a certain method may be followed. The site of the inguinal hernia may be examined first, and next in order the femoral, umbilical, epigastric, ventral, ischiatic, perineal, and obturator. By making a thorough examination the location of the obstruction may be found.

In typical cases a strangulated hernia is easily diagnosed from the history of the case and from the general and local symptoms, but in atypical cases many of the symptoms may be masked, modified, or entirely absent. In case of a partial strangulated enterocele, or a strangulation of the appendix or omentum, or both, the general symptoms may be much modified or entirely absent, and the local symptoms simulate those of an inflamed or obstructed hernia. On the other hand, if the hernia is so small as not to be readily detected, or in cases of rare forms of strangulated hernia within the abdomen, such as the interstitial, lumbar, perineal, obturator, and hernia into the foramen of Winslow, or if a small loop of intestine should be strangulated within a large hernia, which as a whole is reducible, the local symptoms are absent and the general symptoms simulate those of any other form of acute intestinal obstruction.

Various tumors, adenitis, acute epididymitis, hydrocele of the cord, and hydrocele at the site of the hernia, may be mistaken for strangulation. To differentiate these conditions from that of hernia the general symptoms of vomiting and constipation, which are absent in the above conditions, are prominent symptoms of a strangulated hernia.

Possibilities of errors in diagnosis of such and similar conditions emphasize the necessity of making immediate exploratory incision when the life of the patient is endangered and the cause is obscure.

Prognosis.—If the hernia remains untreated the prognosis is bad. Only the rare cases in which the sac and tissues covering the hernia slough, so as to form an artificial anus, may recover. In very acute cases the patient may die in a few hours, but the majority live from five to seven days. There should be no delay in treating a strangulated hernia. Statistics show that every hour of strangulation increases the mortality. Those treated by taxis show a mortality of 15 per cent in femoral and 8 per cent in inguinal, and herniotomy 10 per cent to 12 per cent mortality if the strangulation has existed for less than 24 hours. If strangulation has existed for three days there is a mortality of 50 per cent, so that the death-rate is more or less in proportion to the length of time that the bowel has been strangulated. The mortality which follows taxis and that of herniotomy cannot consistently be compared, as it is only in those cases in which taxis has failed that herniotomy is resorted to. In all probability those reduced by taxis could have been successfully operated upon.

Treatment.—This is either by taxis or herniotomy. Taxis is to reduce the hernia by manipulation. The patient is placed on the back, the hips are elevated, and the thighs flexed. The neck of the sac is grasped with one hand and gently pressed with the tips of the fingers. Alternate traction and pressure are made in the direction of the canal in the inguinal hernia, and backward and upward in the femoral. This procedure may be continued for five minutes. If the hernia cannot be reduced by gentle manipulation, hot compresses, an ice-bag, or ether spray may be applied at the site of the hernia; if this fails to reduce it the patient should be prepared for an operation. When under the influence of an anesthetic taxis may be employed for a few minutes, and if this fails, herniotomy should be resorted to. The course to pursue, when to operate, or how far attempts should be made to reduce a hernia by taxis, may vary to a great extent with the different circumstances.

If in the larger cities, where access to facilities for doing a successful operation is at hand, little effort may be made to reduce the hernia by

manipulation, as an operation for a radical cure is to be desired. On the contrary, in the more sparsely settled districts in the country, a physician may be called away ten to twenty-five miles to find a patient suffering with a strangulated hernia. The house may consist of only one to two rooms, containing a large family, and the surroundings be filthy and unsanitary. It is too far away to call an assistant, and no nurse is to be had. When one meets such conditions every effort should be made to reduce the hernia by taxis rather than to resort to an operation. An anesthetic greatly favors reduction, or a hypodermic of morphine sufficient to relieve the spasm and put the patient asleep, may be given. In one instance a patient refused to take an anesthetic or to be operated upon. A dose of morphine was given, and the patient fell asleep. The hernia was reduced spontaneously in a few hours, where I had previously failed in every effort to reduce it by taxis.

Under all circumstances, if the hernia cannot be reduced by taxis, a herniotomy should be performed, and, as President Roosevelt said in the course of a speech at a medical banquet of army surgeons: "Do the best you can under the circumstances, even if you have nothing but a jack-knife to do it with." It is often surprising how heroic efforts may be crowned with success.

Taxis should not be attempted when the strangulation has existed for more than twenty-four hours, or when it has previously failed to be reduced, when the hernia has been irreducible, when there is great prostration, or when there are symptoms of inflammation, gangrene, and peritonitis. The dangers of taxis are injury and rupture of the intestine, returning of gangrenous intestine and septic fluid into the abdominal cavity, and reduction *en masse*. Reduction *en masse* does not occur very frequently, but care should be taken not to use force in reducing a strangulated hernia. If force is applied, it may be pushed in between the transversalis fascia and the abdominal wall, with the constriction still remaining at the neck of the sac. This will apply more so to the inguinal variety.

This condition may give the appearance that the hernia is reduced, when in fact the gut has only changed position, forming an interstitial hernia. This condition may also be brought about by the patient in attempting to reduce a hernia which may have been strangulated at the time. In case the patient can give no history of strangulation, no local or external symptoms can be found, and the general symptoms are those of an acute obstruction, the diagnosis is difficult or impossible, and an immediate exploratory incision should be made.

Herniotomy.—Herniotomy consists of the operation for the relief of strangulated hernia. The

operation should be performed as soon as the effort at taxis has failed, and the sooner after the strangulation has taken place the better. The incision should be made similar to the operation for radical cure of hernia of the same kind. It should be made sufficiently large for the operator to work freely, and the opening large enough for the gut to be returned easily into the abdomen in full view, so as to avoid kinking of the intestine. After having divided the outer layers, the sac may be recognized by its dark-blue color covered with fat. The sac is carefully pinched with two artery forceps and divided between them. The edges of the sac are retracted and the contents of the sac noted. If there is no fluid in the sac, or if the fluid is serous or even bloody but odorless, the gut is sound. But if the fluid is seropurulent and ill-smelling, the intestine is gangrenous. The contents of the sac are thoroughly irrigated with warm water or normal salt solution. The constriction is divided with a herniotomy knife upon a broad director or divided from without toward the peritoneum in the inguinal hernia. If the intestine is sound, the peritoneal coat is smooth, the color is red or purple, and it feels firm and warm. When the gut is in this condition it is watched till the circulation is established and then returned into the abdomen, but if the serous coat is granular, and the gut is flabby and edematous and of a grayish-black color, the gut is gangrenous and should not be returned into the abdomen. In doubtful cases the intestine may be left in view in the incision for some time up to twenty-four hours, and conditions noted. If the intestine is gangrenous the loop must be resected and reunited at once, or the loop should be left in the wound and an artificial anus should be formed.

In deciding what course to pursue, it would depend on what facilities are at hand, the surroundings, the condition of the patient, and the skill of the operator. In case the patient is far out in the country, no assistant is at hand, the patient is exhausted, and the hernia large, and the operator perhaps not used to intestinal surgery, it would be better to leave the intestine in position to form an artificial anus rather than to take the hazardous risk of doing a resection. But if conditions are favorable, a resection is to be preferred, as this procedure avoids doing a second operation for the relief of an artificial anus. No rules for the choice of procedure can be laid down, but must be left to the judgment of the operator in each individual case.

The mortality following a secondary operation to close the artificial anus is from ten to twenty per cent, and the disadvantages of doing a primary resection are severity and long duration of the operation, insecurity of the anastomosis, the difficulty in determining the extent of neces-

sary resection, and deficient and tedious emptying of the intestine. These disadvantages, according to Peterson, can be overcome by using Schleich's infiltration anesthesia and the Murphy button. By a local anesthetic the bowels can be completely emptied and the resection be made high up into sound tissue, and by using the Murphy button the duration of the operation is shortened and anastomosis is made more complete and secure.

If the formation of an artificial anus is decided on, a few catgut sutures are inserted to hold the intestine in place, and an opening in the intestine is made so that a free escape of the intestinal contents is provided for. The hernial incision is partly closed, leaving only a sufficient opening for the artificial anus.

In resection of a gangrenous intestine the gut should be emptied and the excision should be so extensive as to insure the complete removal of all gangrenous tissue and secure a healthy stump. A circular enterorrhaphy is preferred, or the employment of a Murphy button. The omentum, if much damaged by inflammation, is ligated and excised. The hernial incision should be closed the same as in the operation for the radical cure of hernia. A small iodoform gauze tampon may be left in the wound for drainage if it is thought necessary. Aseptic dressings are applied and the parts bandaged. The patient should be kept quietly in bed, and only predigested food and liquid diet should be given until the bowels have moved freely.

The operations for gangrenous hernia show, according to statistics of different compilers and operators, a mortality of fifty per cent to seventy-five per cent in the treatment of an artificial anus, and from twenty-five per cent to fifty per cent in those treated by primary resection and reunion.

Statistics of 1,090 cases operated upon for strangulated hernia:

268 died. Mortality per cent of 24.58.

496 were inguinal, 99 deaths. Mortality per cent of 19.95.

485 femoral, 120 deaths. Mortality per cent of 24.74.

109 umbilical, 49 deaths. Mortality per cent of 44.95.

Dr. A. E. Parker remarks on the result of 406 operations for strangulated hernia, of which 127 died. Out of this number of deaths about 100 died from trouble depending upon the condition of the bowel returned, and 27 from various other causes. This being the case, it is of the utmost importance that all the damaged gut be removed, and that the anastomosis be made as secure as possible, or in case this cannot be done, the bowels should be fixed in the surface wound, and an artificial anus should be formed.

REPORT OF CASES

Case 1. S. R., male, age 53, farmer, medium build, good habits, had always been in fairly good health. He had been ruptured for the last thirty years, and during this time he had always worn a truss. The hernia, as he described it, was of the size of a hen's egg, and it was readily reduced by gentle pressure.

April 15, 1900, he was taken sick with colicky pains and vomiting. The next day a physician was called, who diagnosed his condition to be acute obstruction of the bowels. The patient was taken to town and cathartics and high rectal injections were given without affording relief of the obstruction. No food could be retained on his stomach, and rectal feeding was resorted to. The vomiting became more frequent and at times stercoraceous. April 18th he was brought to the Bethesda Hospital, Crookston, by Dr. Risjord of Fertile. The patient was very much exhausted, temperature subnormal, pulse thready and rapid. He gave no history of having had any difficulty in reducing the hernia. Vomiting was frequent and stercoraceous, and constipation was complete. The abdomen was tender on palpation, slightly tympanitic, and pains were sometimes referred to the region of the umbilicus. An immediate exploratory incision was advised. Dr. Engstad of Grand Forks, N. D., was called in consultation, and an operation was performed the same day the patient was admitted to the hospital. A median line incision was made. The hand was introduced through the incision, and gently passing it over the abdominal contents, it was soon found that a loop of intestine was strangulated at the right inguinal ring. The constriction was divided with a herniotomy knife, and the strangulated gut was brought out into the abdominal incision. The gut was of a dark-blue color, and there was a deep, narrow groove where the constriction around the loop had been. The loop was left in the incision, and warm compresses were applied. In fifteen to thirty minutes the circulation was established, and the gut was returned into the abdominal cavity. The edges of the inguinal ring were scraped with a knife and sewed together with a few chromatinized catgut ligatures. The abdominal incision was closed, leaving a small iodoform gauze tampon for drainage. The patient made a rapid recovery, and was discharged from the hospital May 15th. There has been no return of the hernia up to this time.

Case 2. C. S., male, aged 50, intemperate. Had been on a spree for several days, and had inbibed freely of pure alcohol. His health was more or less undermined by drink and exposure. He had been ruptured from infancy, and always wore a truss. The hernia was not large and always easily reduced.

December 14th, 1901, I was called in consultation with Dr. Johnson, of Climax, who had attended him two days for obstruction of the bowels. Purgatives and high rectal enemata had had no effect on the obstruction. The patient complained of pain in the abdomen. The vomiting was not pronounced and consisted of a little bile-stained fluid at intervals of several hours. The abdomen was tender, but not tympanitic, the pulse was rapid and wiry, skin clammy, and the face and extremities were cold and had a cyanotic appearance. There was no pain, and nothing abnormal was found at the site of the hernia. On account of the weak condition of the patient and the mild symptoms of obstruction, we concluded that the obstruction might be due to paralysis of the bowels brought on by exposure, so we decided not to operate at present, but administer strychnine, hypodermically, to the desired effect of the drug, with the view of overcoming the apparently paralyzed condition of the bowels. Soon the obstructive symptoms became more pronounced, the vomiting became more frequent, and the pains more acute. Next evening I was called again. His general condition seemed to have improved considerably. An exploratory incision was advised as the only course for a possible relief, which was readily consented to.

A median line incision was made. In passing the hand over the contents of the abdomen to the hernial site, a small loop of intestine was found strangulated at the right inguinal ring. The constriction was divided, and the gut was brought out into view. There was a deep furrow at the place of constriction, and the gut was of a dark blue color. Compresses of saline solution were applied to the gut and after some time the circulation was restored and the loop was returned into the abdomen. The inguinal ring was sewed up with chromatinized catgut ligature, and the abdominal incision was closed, leaving a small iodoform gauze tampon for drainage. The patient made an uneventful recovery, and the hernia has not returned. This operation was done in a small farm house, where only little aseptic precaution could be observed.

Case 3. N. O., female, aged 55, single, occupation housework, medium build, and in fairly good health. She had been ruptured for fifteen years. For the last four years she always wore a truss. The hernia was very small and easily reduced.

April 16th, 1902, she was taken sick with pain in the abdomen and vomiting. A physician was summoned, who diagnosed it acute obstruction of the bowels. Cathartics and high rectal enemata only aggravated the symptoms of obstruction. The next evening the attending physician, Dr. Johnson of Climax called me in consultation. She vomited at intervals of only a few minutes. Lav-

age of the stomach would relieve her from vomiting for only a short time. The abdomen was tender and tympanitic, but her general condition was fairly good. An operation was advised, and the next morning she was removed to the Bethesda Hospital, Crookston. Under anesthesia a small tumor could be felt in the right inguinal canal, which tended to confirm our suspicion of a strangulated hernia. The choice of operation was between a median line incision and Bassini's operation. The latter was decided on, and the incision was made into the hernial sac. When the sac was opened about a drachm of serous fluid ran out. The sac ended in a blind pouch, where a mass of adhesions could be felt. The incision was extended beyond the inguinal ring, and an opening was made into the abdomen. A loop of intestine, together with omentum, was found strangulated at the right inguinal ring. The constriction was divided from without inward. The adhesions were broken up, and the gut, together with the omentum, was brought out into the incision. The gut was of a dark-blue color, and the groove at the constriction was very deep, almost severing the intestine. The constricted portion of the omentum looked almost black, so it was tied off and excised. When the circulation was established in the gut it was returned into the abdomen, and the incision closed as in Bassini's operation for a radical cure of hernia. The patient made a slow recovery, and was discharged from the hospital May 30th. Some months later she developed a large hernia at the place of the incision.

None of these cases were positively diagnosed as strangulated hernia, although it was strongly suspected that strangulation might have taken place. They gave no history or having had any difficulty in reducing the hernia; no pain was referred to the hernial site, and there was no more tenderness at that point than at any other portion of the abdomen.

DISCUSSION

DR. A. E. BENJAMIN (Minneapolis): I am sorry Dr. Holte did not find time to read all of his paper. I have had the pleasure of reading it, and I want to say that it certainly is complete, and if he had read all of it I should have nothing to say whatever. There are a few points in the strangulation of hernia that are well to consider. The doctor brought up age as a condition to judge of the strangulation. I do not operate so frequently in children, but I have had the opportunity to operate on a few of these cases in children, and in one case where there was strangulation, and when it had been reduced there was a non-descending testicle. The reason strangulation occurs more frequently in old people than in children is because the first patient has had the hernia a long time, he has worn a truss for a long time, and he has become used to it. The nerves are less sensitive, there is less soft tissue around the ring, and this hard tissue constricts the bowels when strangulated; and these patients do not know when there is hernia and strangu-

lation, but there is an irritability of the nerves in a great many of these cases, and usually it occurs in a patient that wears a truss. In all cases I have operated on for strangulation of the bowels, the hernial strangulation has been in cases that have been wearing trusses, and they have been working at ordinary labor, and, as they said, they did not know the bowel was coming down until they began to have extreme pain and had hard work to get home. Two of the cases that the doctor reported are very interesting. We should remember that where the patient has acute pain with vomiting and other symptoms that are present, in cases where the bowel is involved, a laparotomy is necessary. If we can demonstrate the presence of hernia we should operate, and not wait until the patient is in a bad condition. I think in all of these cases where it has been demonstrated that there is strangulation a radical operation should be done at the time. It is just as easy to perform a complete radical operation as it is to perform taxis, and just as safe where the bowel has been out the first time. I can see that there are exceptions to this rule; for instance, where the patient is out in the country without any attendants.

DR. WALTER COURTNEY (Brainerd): I am very sorry that time did not permit us to hear all of Dr. Holte's paper. It was an excellent paper and Dr. Benjamin's discussion was excellent. In regard to constriction: I noticed that neither Dr. Holte nor Dr. Benjamin brought out this particular circular constriction in the sac. I have found it is constriction many times in making radical cure, and I have never seen any pain from the presence of this circular constriction in the sac. I believe it is due to the original neck of the sac having been dragged down and united together permanently below that point.

In regard to symptoms: It is surprising sometimes how severe conditions we may have with very slight symptoms. I saw nearly three years ago a case of strangulation of the bowel in femoral hernia where the patient went about all the time. I operated and found a gangrenous wound. There was about three-fourths of an inch of the bowel gangrenous, and there was only enough left for the passage of gas, and yet that man suffered so little that he really objected to having the operation. The bowel was resected under cocaine, and three-fourths of an inch resected.

In regard to treatment: I think taxis is something we ought to be careful about using, and I do not think we ought to resort to it after twelve hours. The doctor has shown us that fifteen per cent of femoral hernias and strangulated hernias where taxis was used died, and eight per cent of inguinal hernias died. It is more than possible that in the use of taxis the bowel was restored to the peritoneal cavity in a gangrenous condition, and it is more than probable that that is the cause of the high mortality. In doing the operation for strangulated hernia I think we ought to be exceedingly careful that we do not lose sight of the bowel. It sometimes happens in cutting the neck of the constriction that the bowel will slip back before you have a chance to see it. Some men are satisfied if the hernia is reduced, and so let it go. Some times it will result in a gangrenous bowel, and the patient will die.

In regard to taxis: As I have said, it ought not to be employed after twelve hours unless the condition of the patient is such that it can be done with perfect safety; and in doing the operation, I think we ought to be very careful about returning any doubtful bowel. When the peritoneal surface is broken I do not think it would be safe. I doubt that some patients would not stand a resection. I have merely attached it opposite the mesentery and furnished drainage, and then made a secondary operation.

DR. H. B. SWEETSER (Minneapolis): I think the

subject of strangulated hernia is a very important one. The mortalities I have seen have been the result of delay in operation. Where hour after hour was taken up with taxis I have been less conservative than Dr. Courtney, because I believe twelve hours is too long to let go by and employ taxis. Operation where the bowel is not gangrenous is an operation with no mortality at all, and we know that taxis is an operation with fifteen per cent mortality. I have operated on some very bad cases, and I have never operated on a patient where the bowel was not gangrenous who died. I have operated on patients seventy-five years of age under cocaine, and I have operated on babies

forty days old, and both recovered. If I had operated by taxis, which is kept up hour after hour—if I had operated an hour by taxis—the patient would have died of general peritonitis. Taxis ought never to be employed for more than five minutes, and it ought never to be employed except during the time it ought to take to get the case ready. There is no more danger in an operation of this kind, that is, to cut through the skin of the sac and through the constricting bowel where the pressure is after strangulation has occurred, than there is in the most simple operation. It is practically without danger, and anybody can do it. It can be done under local anaesthesia.

ULCER AND CANCER OF THE STOMACH; THEIR RELATIONSHIP*

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It is not the purpose of this paper to consider critically the statistics submitted by the many writers on these two stomach lesions. This has been done, often and carefully, and we could add little that would emphasize the importance of a careful study of selected statistics by again entering the field. It cannot be a matter of doubt that these several writers are in earnest and working in accord with studied convictions, so we have no right to endeavor to set aside the evidence thus presented, save through presentation of data founded upon actual clinical, pathological and surgical experience. It is the purpose here to present, as accurately as possible, statistics of the last four years' work done at St. Mary's Hospital, and to offer conclusions drawn from the office clinic, backed by the surgical evidence.

There is a small but growing number of clinicians who believe that cancer of the stomach is often engrafted upon ulcer, and that the pre-cancerous history, whether manifest for a longer or shorter time, is but the condition of ulcer or associated lesion. None yet claim that all carcinomata of the stomach are implanted on a previous ulcer base, but the belief that it is the chief etiological factor is daily gaining ground, and the more rapidly since post-mortem conclusions are being enlightened by early surgical operations and carefully developed clinical histories.

When we speak of the pyloric end of the stomach we may include more than is usually understood. It is the lesion-bearing area, and includes that part of the stomach which has the beginning of the horizontal portion of the lesser curvature as its upper left limit. From

the pyloric ring to this point is from two and one-half to three and one-half inches. Along the greater curvature the corresponding point would be three and one-half to four and one-half inches from the pyloric ring. A line joining these two points would have to the right of it the great ulcer and cancer-bearing area. This pyloric end, then, is what we mean when speaking generally of pyloric lesions. When we attempt to place lesions of the stomach at specific locations, and especially is this true of cancer, our statistics can be true only within rather generous limits. This, we believe, is true of all statistics of the stomach, no matter how conscientiously sought and tabulated. What one formulates is not absolutely exact—only approximately so. A truth is taught which is always subject to some modification. This is all we claim here. We have endeavored to be somewhat specific as to lesion-location, more for purposes of comparison than because it teaches more clearly the pathological condition.

In our clinic, in about 75 per cent of the ulcer cases that came to operation the lesion was practically at the pylorus; and about 20 per cent make up those situated at both the pylorus and lesser curvature, and include those at the posterior wall, and also those at the lesser curvature only. All were in the pyloric end. In somewhat more than 3 per cent gastro-enterostomy was done, and the ulcer not located. There was a little better than 1 per cent hour-glass stomach, and 1 per cent cardiac. Most of these patients gave the history usually found in ulcer,—pain, distress, gas, vomiting, belching, sour eructations, heart-burn, acid stomach, emaciation, constipation, and hemorrhage. One or more of these symptoms were necessary to

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make the diagnosis. Most of them gave histories varying from 1 to 30 years, oftenest 3 to 8. A certain but small per cent gave short histories, with bleeding, perforation, or obstruction as the first intimation of disease.

Of the cancer cases that came to operation, 34+ per cent were located at the pylorus, 24+ per cent were pyloric and lesser curvature both, and include those at the lesser curvature near the pylorus. In about 6 per cent where gastro-enterostomy was performed the situation of the lesion was not noted, but had to occupy the pyloric end if the operation was to benefit. In about 24 per cent an exploratory incision was made, and the location of the cancer not determined, or not stated, yet the greater number of these gave histories which pointed to more or less pyloric invasion at one time or another; and the possible chance to give relief either by pylorotomy or gastro-enterostomy was what prompted operation. A little less than 12 per cent were recorded as cardiac. This points rather distinctly, then, that both ulcers and cancers are most numerous at the pyloric end of the stomach; and that they run very closely as to percentage in both, and are located at similar positions. The great discrepancy is found at the cardia, but cardiac cancers, so called, are often esophageal, and extend toward the stomach. As operation promises little except to prolong life by gastrostomy, one seldom demonstrates whether the cancer is primarily esophageal with extension toward the stomach, or primarily gastric with extension to and obstruction of cardia. However, the greatest number by far is of an esophageal character, and remains so. This we believe is the error (at any rate in our tabulation of cardiac cancers) that places cancer of the cardia so much in advance of ulcer of the same region. The carcinomatous lesion apparently begins at the point where ulcer of the esophagus is most common, as demonstrated by cauterization due to the swallowing of lyes. Again, cancer of the cardia offers little difficulty of demonstration, while ulcer is difficult except at post-mortem.

What, then, do histories and operative findings show? In 1901, 72 per cent of the cancer cases gave a pre-cancerous history of more than two years. In 1902, 70 per cent gave a history so long that a pre-ulcerous stage could scarcely be questioned, and in two recorded cases cancer was demonstrated on an old ulcer base. In 1903, 50 per cent of the patients operated upon gave a long pre-cancerous history, and over 15 per cent of the whole number showed cancer on ulcer, and all with short histories, less than one year, while one covered a period of less than six weeks. Then in 1903 there was more

than 65 per cent of patients who either presented histories long enough to exclude cancer as primary or gave short histories, and cancer was demonstrated on ulcer base. In 1904 the long pre-cancerous history was found in only 28 per cent. During this year 18 per cent of the cases showed cancer engrafted on ulcer with about one-half this number giving a short pre-cancerous history, i. e. less than two years, or perhaps it would be more accurate to say a latent ulcer history, the symptoms appearing as the degeneration to cancer progressed. From Jan. 1, 1905 to May 9, 1905, 28 per cent of the cancer cases operated upon show ulcer as the primary lesion, with one questionable case not here counted. The average for the four years gives about 60 per cent of cancer of the stomach with a preceding ulcer history, or with ulcer base and engrafted cancer demonstrable.

It will be seen from the above statistics that the long pre-cancerous histories have fallen off to quite an extent, for which we do not offer an explanation. However this may be, the more careful examinations, both macroscopical and microscopical are abounding in proof that is incontrovertable that ulcer and its allied lesions as a factor in etiology of gastric cancer cannot be lightly considered—yes, even more, that ulcer is the great factor as a precursor of cancer. It also teaches that the surgeon must watch carefully his operated cases to determine what procedure is best when he meets ulcer, whether excision is necessary to avoid future degeneration, or whether by an early gastro-enterostomy or other operation he may promote cure of the ulcerous condition, and thus reduce to a minimum the dangers of malignant change.

Here it might be interesting to compare statistics most often quoted with what we have found. Brinton's statistics of 1857 give practically as the location of ulcers of the stomach 81 per cent at or near the pylorus; of cancers 76 per cent at the pylorus. Welch, in Pepper's System of Medicine, 1885, gives ulcers at or near the pylorus 77.9 per cent and of cancers at the same location 77.4 per cent. It will be noted all are in the pyloric end. At St. Mary's clinic fully 85 per cent of ulcers and more than 76 per cent of cancers have been similarly located. This can hardly be coincidence. The discrepancy of location in ulcer and cancer as given by Welch can be easily explained. His statistics are based chiefly on post-mortem findings. The lesser curvature stands first as to the number of ulcers, and the pylorus third. In cancer the pylorus ranks first. A cancer when it has become active whether on the posterior wall or lesser curva-

ture most often follows the course of the lymphatics, and thus travels towards the pylorus. It may retrograde, but the more rapid growth is with the lymphatics; hence in late operations or at post-mortem the pylorus is found involved, and then the most active seat of cancerous change is the pylorus, and naturally it comes first in cancer statistics based on autopsies or late operation. Statistics based on early operation will, we are sure, bear out our premise. Again, it is argued that short histories are found in all but a small proportion of cancer cases, hence, a preceding ulcerous condition is not causative. Let us grant this in a measure, and follow out findings. First, in 3 to 5 per cent of all persons coming to autopsy an ulcerous lesion is found, and was either symptomless or the diagnosis not made. Secondly, what surgeon of only ordinary experience has not been called upon to operate on a case of perforation, hemorrhage, or acute obstruction of the pylorus, and found himself unable to elicit even a premonition of the symptoms, previous to these he has been called upon to abate? Has he not often found lesions that were more than recent? Brunner, in 600 cases, found that 90 per cent perforated through old lesions. Third, has not this same surgeon been called upon to operate upon a carcinomatous stomach with symptoms of but a month's duration where obstruction is near complete, and found wide spread trouble at the lesser curvature and pylorus of questionable age at least? Fourth, cancer developing on an ulcer base is often demonstrated, and has at times a very short, or no real pre-cancerous, history.

In our clinic, of the ulcer patients that came to operation, the proportion was 1 to 1.18 in favor of the greater number of females, while in cancer there were nearly two males to one female. Strumpel finds difference in sex of no consequence in either ulcer or cancer, and Riegel draws practically the same conclusions. Perhaps what Strumpel says is quite nearly the truth, that is, that slightly more young females than young males have ulcer, while the reverse is true as age increases. Certainly, so far as the abuse of the stomach is concerned man can truthfully plead to more guilt, and this may be a factor in causation and continuation of these lesions.

If we argue from analogy let us consider the uterus. Here trauma and ulcerous lesions and erosions are common during the child-bearing period, and as age advances these conditions decrease, while cancer of the cervix increases, and it would seem that these similar lesions here are the great precursor of cancer. The same is true of carcinoma of the lip. Women are rarely

attacked by carcinoma of this region, and as rarely do we find cause. In men irritation often starts early, ulcer later appears, and as time advances cancer may and does often follow.

Surgical statistics and post-mortem findings do answer the question as to location of the stomach lesions, and agree perfectly, if we only translate the seeming differences properly, but late operation and post-mortem findings can have but little weight in answering the question as to what is the pre-cancerous condition, as all pre-ulcerous signs would be lost in the cancerous degeneration, in most cases at least, quite before fatal issue.

Our clinical experience teaches us:

That the very great majority of ulcers of the stomach are located at the pyloric end. The immediate pylorus comes first, the lesser curvature second. A small per cent is found elsewhere, few at the cardia.

That the great percentage of cancers of the stomach are found at the pylorus and lesser curvature (pyloric end), that is, the same location find the greatest number of each.

That quite a percentage (50-60) of patients suffering from carcinoma give three or more years of a pre-cancerous history.

That a growing percentage of cancer cases is found with short histories and ulcer demonstrated as the earlier lesion.

That there is a percentage, if small, of short ulcer histories leading to acute pyloric obstruction where the ulcer must have been present for quite a period, and latent.

That ulcers may be present for an indefinite period and no symptoms follow until obstruction, perforation, and hemorrhage appear, if the acidity is low or absent, and the ulcer locates itself along the lesser curvature or near the pylorus.

That cancers may develop under the same gastric conditions, and manifest themselves only when obstruction or systemic poisoning makes itself felt.

In conclusion, we would suggest that what is most needed to-day to settle these disputed points is better and earlier diagnoses in both ulcer and cancer of the stomach so that the non-medical cases may be reached by the surgeon at the time when promises for life are greatest and when the pathological condition is easiest to demonstrate. It is not surgical technic that we need so much; it is the actual bed-side diagnosis that is still far from ideal.

DISCUSSION

DR. J. CLARK STEWART (Minneapolis): I think the Association is to be congratulated upon having presented to it so valuable a contribution to our general knowledge of the subject of cancer. The pathological

knowledge of these processes has been immensely aided by the results of surgical work. As Dr. Graham pointed out, the results as seen at the post-mortem are different from those seen on the operating-table, and pathology owes a great debt, and will owe a still greater one, to the carefully observed surgical operation. It takes into consideration the etiology of cancer, and we must confess that we all know very little about the etiology of cancer.

The larger point that stands out in the etiology of carcinoma is, that it is mainly due to irritation. Statistics show that carcinoma occurs at all points where accidental injuries take place, at points of constriction, and where accidental traumatism are most common; and the pylorus of all places is the point where the greatest number occur. Another point where carcinoma occurs is on the site of scar tissues. The same would seem to be true, to a greater extent than we believe, in the stomach according to Dr. Graham's statistics. I believe it will be found by careful study that it is the ulcer, the large scar, that is the seat of chronic carcinoma, and that it is the chronic ulcer and not the small acute ulcer that is the general site of carcinoma. It is said that the pylorus is the most frequent site of carcinomatous degeneration. If it is it is another proof of the theory of injury.

DR. A. R. COLVIN (St. Paul): I do not know that I can discuss this subject, particularly because I feel that only those who have had much experience in surgery of the stomach can speak intelligently upon it. I am going to speak in a general way regarding the etiological relationship between general ulcer and carcinoma. We often see lacerations of the skin that precede carcinoma, and frequently such lacerations are followed by carcinoma. I am sure we see these old ulcers that have existed for years that are not due to laceration, and that the cutting of the epithelial cells induces carcinoma is a mere speculation. In almost every wound we find some displaced epithelial cells, and in every laceration certainly there are epithelial cells buried in the granulation tissue. This has been shown in histological work, and it is difficult to see how we can accept that as a decisive etiological factor until laceration is more frequently accompanied by carcinoma. The trouble is, we do not know, even the most eminent pathologists do not know carcinoma when they see it. I was very much pleased with Dr. Graham's paper.

DR. J. L. ROTHROCK (St. Paul): I can only say that I must look at this subject from the standpoint of the pathologist. I have seen these cases surgically and clinically. It seems to me that this is a question of great importance, especially in its relation to cancer and ulcer, because it has a great bearing upon the prognosis and treatment of ulcer; and if it is found that cancer frequently develops from ulcer, as statistics seem to show, then it would be necessary to deal more radically with cases of ulcers. It seems to me, however, that we must be cautious in saying that a cancer has developed in place of an ulcer. We must be cautious to differentiate between an ulcer and a cancer, and we must also be very cautious in saying that the infiltration of cicatricial tissue is not really the source of many cases.

The question with regard to the etiology of ulcer and cancer we cannot, of course, well harmonize until we know more about the cause of cancer. We can only apply theories, and we can apply the irritation theory if the history of a case meets it. A couple of years ago Ogle read a paper in which he stated that he had seen a case of cancer following an ulcer caused by irritation, and this he believed was a strong argument in favor of the theory of irritation causing can-

cer. If further experiment demonstrates the proof of this I am willing to accept his conclusion.

It seems to me that this is a question in which the surgeons must make material advancement, and it is very desirable that the cases be worked up surgically, and they must be thoroughly worked up before any conclusions can be drawn.

I want to say that I enjoyed the doctor's paper very much, and it is papers of this character that will finally afford us some definite information on the subject.

DR. GEO. D. HEAD (Minneapolis): I think we are deeply indebted to Dr. Graham for his action in bringing this subject to the attention of the Association. It certainly is a matter that ought to be settled, one way or another and as soon as possible, because a carcinoma may be superimposed upon an ulcer, and the surgeon does not know it. I was in hopes Dr. Graham would give us something more about the pathological and histological study of these carcinomata superimposed on ulcer which have been excised in the early stage.

As I have gone over the literature and got the opinion of various pathologists, no one is ready to say whether ulcer with carcinoma of the stomach is a benignant secondary ulceration, or whether the carcinoma has been superimposed upon the ulcer. This is, from the pathological study, the condition as I find it. No one is ready to say: "This is a carcinoma, benignant secondary ulceration," or "this is ulcer upon which carcinoma is superimposed." If pathologists are not willing to give us definite data upon which the case can be decided, I do not see how the surgeon can give us any definite data unless it be in cases where the carcinoma occurs in the walls of the ulcer, that is, in some one local point in the ulcer. If the whole growth is benignant ulceration or degeneration, or if the surgeon finds an ulcer upon which a carcinoma has been superimposed, it gives us no additional evidence at all. An ulcer of the stomach may be an ulcer of benignant secondary growth, or it may be an ulcer upon which carcinoma has been superimposed. Therefore, until we have further evidence, we must rely on the clinical history. Now, we are all familiar with ulcer of the stomach, and we have all encountered it. There are ulcers of the stomach that are genuine, and they must be the exception and not the rule. The history of cases of carcinoma of the stomach, so far as clinicians who have had large experience are concerned, gives us but one picture, namely: a short history of gastric trouble running back not more than two years.

I would like to call the attention of the Association to the splendid study by Drs. Osler and McRea of about one hundred and twenty cases of carcinoma of the stomach in which less than ten per cent gave a history of previous gastric trouble prior to two years, and with no distinctive symptoms of the disease. This seems to me absolute evidence that carcinoma is not superimposed upon ulcer of the stomach, since the patient with ulcer often gives a history of gastric trouble early in life.

There are many other points in the clinical history of these cases which, it seems to me, ought to be carefully considered. Of cases of carcinoma of the stomach which occurred in early life a report of fifteen has been collected by Osler and McRea, and some sixteen by some other author. In all of these cases there is absolutely no history of ulcer preceding carcinoma. So we certainly ought to be encouraged in cases where the history of ulcer has not preceded the onset of carcinoma itself. Altogether, it seems to me the idea is very taking, but it must be decided largely from the clinical standpoint until the pathologists can help us out with the study of the early lesions of

the disease, and from the clinical standpoint the theory is not tenable.

DR. C. H. MAYO (Rochester): The discussion of this paper is a most interesting one to me. The point has been brought up by the essayist that first we should have these cases brought in for operation. The diagnosis is to be left to the surgeon, and he is to furnish the evidence, and that he must make the diagnosis from the medical standpoint. It seems to me the medical man interested in sending these cases in at such a time should have them come in as surgical cases.

If we go back over the history of surgery to-day there is very little that comes pathologically to us that gives after death a suspicion of carcinoma. When we think of all the carcinomata about the body, and how few of them produce death from the primary lesion, except where we have death from involvement of the colon—and fifty-five per cent of the deaths occur without any involvement of the colon—and when we look to the dead-house for our teaching, then we can go back to the old conditions of the gall-bladder where the gall-stones were looked upon merely as an incident, and not as a question of life or death, when it was usually considered that these cases were suffering from dyspepsia. We say because they have not had a distinct colic they have never had any trouble, yet these cases go through what is called a dyspeptic condition,

and still they say they have not suffered with colic. Take the condition of appendicitis, and how it was looked upon for a hundred years past. We did not learn anything about the causes. We had conditions of hemorrhage, extra-uterine pregnancy, and so on, and from the dead-house we did not learn anything, and we did not obtain any evidence that was useful to us.

I hope Dr. Wilson is in the room so that he may speak of a case in which he excised the pylorus, and on the margin of the granulation tissue there were ulcers and not a single one a cancer, so the evidence that we get to-day is largely from the dead-house.

The final result may entirely change our opinion, and if we look back on the German work on this subject I think they will entirely change their lines. They have watched these patients and watched until they died, and when it did not show up in the operation it showed up in the dead-house.

DR. CHRISTOPHER GRAHAM (Essayist): I have nothing to add. I am fully in accord with Dr. Head and his report based on the Osler and McRea statistics. Osler based his arguments on past treatment, and it seems to me we are with the pathologist and with the surgeon, and that a number of clinical histories will show that there ought to be some way to show that statistics made fifty years ago are not to be recommended.

RAPID HEALING IN SEPTIC CASES, INCLUDING THE USE OF IODOFORM WAX IN BONE CASES*

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MINNEAPOLIS

The scope of this subject is so broad that the present paper will not include a discussion of the question of small drainage or of any drainage in septic abdominal cases, which has so materially reduced the time of convalescence, as well as its discomforts, nor will it include the great advance made in the treatment of septic conditions of the joints, or operations such as the Estlander and the more extensive Schede for the cure for old empyemas; but, rather, it will be limited to a study of rapid healing in some septic conditions of the soft parts and of the bones.

Many substances, like strong corrosive sublimate, have been used to sterilize the tissues at the time of operation, or like boracic acid powder, have been buried in the wounds to accomplish the same purpose during the time of healing. We have not made much progress with them, because, in the first class, substances strong enough to kill the bacteria in the bordering tissues have killed the tissues themselves and caused sloughs, and, in the second class, have interfered with the

healing of the tissues by keeping them apart.

Since the year 1900, however, we have made a remarkable advance in this direction. It was in that year that Powell of New York showed us that it is safe to use 95 per cent carbolic acid on living tissues, even up to two minutes of time, because 95 per cent alcohol will stop its action almost instantly. It is a remarkable sight to see the whole wound surface turn a dull white with apparent coagulation of the albumins as the carbolic acid penetrates the walls, and then to see it turn back to a rosy red under the action of the alcohol, and later to see that such tissues are capable of uniting by first intention when brought into apposition.

We have repeatedly gained first intention in subacute and chronic abscesses, in whole or in part, by the above method. The following case illustrates this very well. A child two years of age had had patches of eczema on the face and scalp for eighteen months, with crusts and supuration, and during the last four months some secondary abscesses in her neck had been opened and drained. When she was brought to the

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writer she had an abscess two months old in the subcutaneous fat in the right leg, half the size of an egg, and one somewhat larger but of about the same duration in the neck beneath the angle of the jaw. Neither of them seemed tuberculous. The one on the leg was opened, curetted, wiped dry, treated with 95 per cent carbolic acid, followed in one minute by alcohol, and closed for first intention. The one on the neck was treated in a similar manner, but as the surface was moderately inflamed and the abscess ran deep in beneath the angle of the jaw, a single thin strand of gauze was inserted for possible drainage. A compression dressing was applied. In this wound the wick was removed clean on the fifth day. All of the wound was healed by first intention except the narrow tract of the wick, and this rapidly closed after the wick was removed. The walls of the abscess in the leg closed by first intention.

Infected glands such as we see in the groin, can be dissected out, curetted, treated with carbolic followed by alcohol, and the wound closed for first intention under a smooth-tight dressing. This can be done even when some of the glands are actually broken down, and when the process is fairly acute. Sometimes a small wick in one angle of the wound is of service to allow the escape of the early flow of lymph, which sometimes is considerable, as the glands, the natural channels into which it flows, have been removed. Tuberculous glands and tuberculous abscesses, such as we meet with frequently in the neck, less often in the axilla and groin, can be treated in the same way, even when the surrounding tissues are quite extensively broken down, if the curette is thoroughly used in the most infected areas.

In the treatment of perirectal fistulæ we have made a distinct advance. Occasionally we meet with a chronic fistula which is straight, which usually will just admit a probe or a director and which is surrounded by a layer of dense scar tissue. Such a fistula can be completely dissected out with a probe or director thrust to the bottom as a guide, and the wound sutured for first intention. But, it is some of the more extensive, burrowing fistulæ with from one to several arms which test our skill the most. The practice has been to lay all the tracts widely open, cutting the sphincter muscle no more than once unless absolutely necessary, to curette away thoroughly as much of the diseased tissue as possible, and to pack every branch of the tract widely open in order to let each one heal from the bottom, a process which takes from six to eight weeks to accomplish. With the use of our carbolic acid and alcohol we can do much better than that. Our method of operating will be the same, but many of the branches which we have been able to clean out thoroughly may be closed

for first intention, and only a very limited area need be packed or drained in many cases. In some cases where the fistulous tract is fairly simple, even after we have cut the sphincter muscle in order to clean out every portion of the tract, we can suture the entire wound for first intention.

There is another field in which our recent advance has been nothing short of marvelous. I refer to the use of Von Mosetig's bone wax in the treatment of chronic and subacute osteomyelitis, both septic and tuberculous. This wax is made of iodoform sixty parts, oil of sesam forty parts, and spermaceti forty parts. It is solid at the body temperature, but it is easily made fluid by placing a bottle into hot water, and when poured into a bone cavity it rapidly hardens.

My introduction to this work was in following the bone surgery at Moorhof's clinic in Vienna a little over a year ago. The first case I saw him operate upon was a young adult who had a tuberculosis of the bones of the ankle with a discharging sinus. Moorhof made an incision from maleolus to maleolus across the front of the ankle, picked up each tendon separately, and ran a suture through and then back again and left it long, in the bite of forceps, to tie later in the operation. He now cut each tendon between the two punctures of the suture, and turned the whole foot downward into dislocation. The astragalus was found diseased and was removed. One-third of the os calcis was removed likewise, as well as an indefinite amount of the soft tissues which were involved. The tissues about the sinus were cut away clean. The whole cavity was again carefully gone over, and then carefully dried. The foot was now brought up into its proper position, the tendons were all drawn together by the sutures already in place, and the cavity was filled with the bone wax. The soft parts were sutured tight for first intention, except at a point where the discharging sinus had been. Here a small rubber tube, only a quarter of an inch long, was inserted just through the skin to serve as a drain if by an unexpected chance it should be needed. He stated that he expected healing by first intention of the external tissues, that the wax would be replaced gradually by new tissue, largely of bone, and that he expected the man to walk with a movable ankle and with only a slight shortening. After completing this operation Professor Moorhof showed the writer the x-ray pictures of a similar case, taken at successive intervals up to eighteen weeks after operation. At the end of the second week the bone-plug stood out sharp and clear as a piece of lead. At the end of four weeks it was slightly irregular about the edges where new tissues were

growing in to replace it; two weeks later the edges were more irregular; and by the eighth week they looked quite worm-eaten. So it went on up to the eighteenth week, when all that was left of the bone wax was represented by a short indefinite streak, as though a lead pencil point had been dropped onto the paper, drawn lightly for a short distance, and then pulled away. This patient, he said, is now walking with a movable ankle and with only one-half an inch shortening.

Another very instructive case was that of a girl about thirteen years of age, with tuberculosis of the bones of the wrist. Here, through a dorsal incision, without cutting the tendons, all the carpal bones were removed except the pisiform, the cavity cleaned, dried, filled with the bone wax, and sutured over for first intention. After this was completed the writer was shown a girl of about the same age who had had a similar operation performed three months before. This girl had a movable wrist and was sewing with that hand.

These results are nothing short of marvelous. They are obtained in exactly the same cases in which up to this time we have advised amputation.

The use of this bone wax has also revolutionized the treatment of chronic and subacute osteomyelitis. Moorhof has shown us that we can clean out these cavities, fill them with the bone wax, and suture the soft parts over it for first intention. The wax is gradually replaced by the ingrowth of tissue, largely of bone. That he does get first intention in most of the cases is shown in his clinic. One morning he dressed sixteen cases, and the only case of infection was one unimportant stitch abscess.

Since my return to Minneapolis we have duplicated most of these results at the Northwestern Hospital in my service with Dr. Moore, and we have found some further uses for the bone wax.

Only a few of the cases which illustrate special points will be given. One patient, a woman forty-nine years of age, had a tuberculosis of the cartilage of the ninth rib with tuberculosis of the deep fascia over an area half the size of the palm of a hand, and some redness of the skin above this. The perichondrium was split, and the cartilage was found partly destroyed and bathed in a thin tuberculous discharge. The entire cartilage was removed. The inner surface of the perichondrium was curetted, wiped clean, treated with 95 per cent carbolic acid, followed in one minute by 95 per cent alcohol, again wiped dry, filled with the bone wax, and the perichondrium was sutured with catgut for first intention. Meantime the patch of tuberculous fascia had been excised, and the field cleaned with carbolic acid followed by alcohol in the manner described.

All of the external parts healed by first intention, and the patient left the hospital in two weeks. Two months after operation the site of the removed cartilage felt normal in size and in rigidity. Evidently either cartilage or bone had been growing in rapidly to take the place of the bone wax. This patient had had an exactly similar condition of tuberculosis on the other side of the chest nine months before, which had been operated upon and treated in the old way, and a discharging sinus remained for six months before the final healing.

We have used the wax repeatedly in cases of bone abscess with excellent results. The abscess cavity is thoroughly cleaned of all diseased tissue by the gouge, chisel, and curette. It is thoroughly disinfected with 95 per cent carbolic acid followed by alcohol and filled with the bone wax. The soft parts are sutured for first intention.

Under the usual surgical procedure in these cases it is only some very carefully selected cases in which we feel justified in trying to close the tissues over decalcified bone chips or over a blood clot, and even then we often meet with failure. The reason is not far to seek: we have not employed the powerful disinfection of strong carbolic acid because we have only recently learned that we can stop its action at any time and render it harmless to the living tissues by the use of alcohol; and, on the other hand, blood-clot and bone chips are excellent food for bacteria, and break down in rapid suppuration with the slightest infection from the surrounding tissues.

The bone wax offers no such food. Indeed, we have found that the wax plug is of great advantage even in cases where the cavity is near sloughing and infected tissues which have not been thoroughly removed, and so lead to superficial infection of the wound afterwards. The bone wax will stay in plain sight at the bottom of such a wound for weeks while the outside tissues are cleaning off. Often the tissues will finally heal over and leave the bone wax to be replaced more slowly by bone and other tissues. The comfort to the patient of this condition is very marked as compared with the usual painful packing and repacking of the bone cavity with gauze at each dressing under the usual method of treatment.

Influenced by this experience and by a case Dr. Stewart has reported recently in which the superficial tissues were sloughed away, and yet in which he filled a cavity in the tibia with the wax, we were encouraged to use it in the following case. We had performed a resection of the hip in a young male adult for chronic hypertrophic osteo-arthritis, and we were so unfortunate as to have used our water too hot in trying to stop the persistent deep oozing which occurred,

so that when we came to do the dressing of the wound afterwards we found extensive sloughing of the fat layer beneath the skin, and a thin, almost indistinguishable film of necrosis running down into the deep cavity of the joint. The superficial areas gradually became septic with a moderately profuse discharge, while the packing deep in the wound continued uninfected up to two weeks, but we could not hope to keep it so with renewed dressings. At this point it occurred to us that we might fill this deeper space with the bone wax. This was done, and its upper surface was visible during the repeated dressings of the outer discharging area for about three weeks more, during which time it gradually was covered over by the ingrowth of the tissues. The deep cavity was thus converted into a superficial one, and the healing took place in the time it took the portion of the wound to clean up and heal over. Repeated packings with gauze would have made a much more tedious convalescence.

While we have used the bone wax in a number of cases which were not septic and therefore do not come under the title of my paper, there is one more case in which its use is a little unusual and will be of interest. This was a male patient of thirty-five who had a tuberculosis, apparently of the anterior surface of the last lumbar vertebra, with a long, narrow sinus following down near the psoas muscle until it approached Poupart's ligament, when it ran outward and penetrated the abdominal wall above this ligament, apparently at the site of a vein coming through the aponeurosis of the external oblique into the superficial fat layer. Here some four ounces of discharge burrowed about in an irregular double pocket which was noticeably reddened over one end. This pocket was freely opened, the necrotic lining thoroughly curetted and wiped with gauze, treated with 95 per cent carbolic followed by alcohol, and sutured for first intention. Meantime the long, narrow sinus was carefully scraped with a curette, wiped dry, treated with carbolic and alcohol, and packed with a long strip of iodoform gauze. At the first dressing, one week later, the double pocket was found closed by first intention, and the strip of iodoform came out of the long sinus clean. Here was a suggestion for the use of the wax. It was poured into the sinus and hardened there. The outer end, of course, lay exposed under the sterile dressing which was applied. This was covered over by granulation tissue in the course of some fourteen days, and the wound has remained healed three months up to the writing of this paper.

We have, then, in thorough removal of sep-

tic tissues and in the use of strong carbolic acid followed by alcohol powerful agents which allow us to prepare many septic conditions for rapid healing, and in subacute and chronic processes very often for healing by first intention. And we have in the iodoform wax an admirable substitute for iodoform packing, bone chips, and healing by blood clot, one which makes convalescence smoother and shorter, and which in some cases enables us to gain results which are impossible by the usual methods.

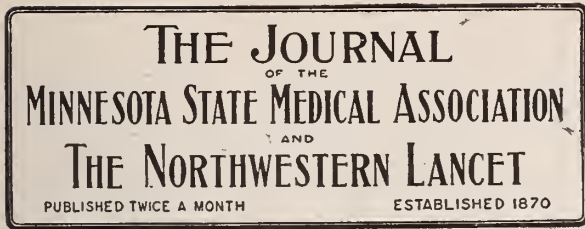
DISCUSSION

DR. J. CLARK STEWART (Minneapolis): I had quite a little experience in the use of bone wax. In a case of suppurative osteomyelitis where you cannot clean out the cavities so as to close them up over the blood clot, it becomes very useful. In such cases I disinfect the cavities with carbolic acid, and then it is a certainty that the wax will stay in place three or four weeks. After that, if the wound has not healed, I have renewed the wax by simply taking out the wax and again filling the cavity full. I have treated a number of cases of old suppurative cavities, and what were once the most trying and painful cases to the surgeon are now the most easily taken care of.

Regarding the technic, the doctor did not bring out the point in regard to the preparation of the wax. The wax must be sterilized, and it is better to sterilize it by applying heat. Bringing it up to 170° F. at intervals of three days and keeping it in glass you can sterilize the wax and keep it sterile, and it will probably cause less irritation than the frequently boiled wax. As to the other points in the doctor's paper, the use of carbolic acid and alcohol, will be treated in my paper to-morrow, I shall not bring them up at this time.

DR. F. A. DUNSMOOR (Minneapolis): I take great pleasure in confirming what Dr. Mann has said. I have had cases in the hospital with a tuberculosis condition of the knee joint that were treated in the same way. I used carbolic acid, and put the knee up in plaster-of-Paris, and let it alone for one month.

DR. A. T. MANN (essayist): I wish to thank the gentlemen for the discussion they have given my paper. I think there is nothing in this work that strikes me so forcibly and so favorably perhaps as the rapidity of the convalescence of the patient. The use of the bone wax avoids the repeated packings at each dressing, and, as you know, these packings are usually very painful. The use of the bone wax need not be confined entirely to the bone tissue. We had one patient, of which I intended to speak, who had a long sinus through the promontory of the sacrum out through the abdominal wall, with an abscess in the wall which stimulated a hernia, probably tubercular, from the lower lumbar vertebra. The external part was opened and filled with carbolic acid and dried well, while the long sinus was packed first with a width of iodoform gauze. This was the first dressing. One week later the external abscess had healed by first intention, and that was the place for the bone wax. We filled the sinus with bone wax, and it lay exposed under our sterile dressing. In the next three weeks it was gradually covered with tissue, and has remained closed for three months or up to the time of this writing.



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SAN FRANCISCO PHYSICIANS

A letter from Dr. E. N. Ewer, of Oakland, Calif., to Dr. F. C. Todd, of Minneapolis, commends the action of the committee in turning into the general fund the moneys subscribed by the physicians of Minneapolis. Under the circumstances no other method would have been justified.

Clippings from California papers show the desperate state of affairs prevailing among medical men in San Francisco. Nearly all of the physicians and dentists, about 500, lost their libraries, instruments, records, and outstanding accounts; and many who were in good circumstances are nearly penniless. The majority of medical men might have saved their diplomas and other effects had they not obeyed the influence of long training and put self last. It is a well known fact that the average physician collects only about 50 per cent of his accounts, and it is presumed this applies to medical men in San Francisco. Now the men who formerly occupied positions of prominence and who had a well established practice must begin as they did on the day they received their diploma, but with the addition of families dependent upon them.

The fund of the A. M. A. Journal grows very slowly, and is in danger of dragging hopelessly except for the June meeting of the Association in Boston. There may be a special call for subscriptions at the general meeting, and if past experiences in raising money by arousing enthusiasm are a criterion there will be a magnificent response. This, however, should not prevent or delay the individual subscriber to the special fund. Medical men need ready money for the support of their families and for the purchase of office equipment. If every medical man outside of California would subscribe a few dollars, or even one dollar, the fund would grow rapidly. When the men of large means meet in general session it will not be surprising to hear of one-hundred-dollar or even one-thousand-dollar offerings. The generosity of medical men toward their fellow sufferers is as prompt as the generosity of any enthusiastic audience who are swayed by an appeal to their emotions.

The distribution of the Journal or Association fund will be in the hands of a committee appointed by the San Francisco County Medical Association.

Of course, it will be impossible to raise enough money to establish the losers in the earthquake and fire of San Francisco in their former positions, but it will be a start that will be fully appreciated.

Do something, and do it at once.

THE MEETING OF THE SOUTH DAKOTA
MEDICAL ASSOCIATION

An enthusiastic meeting of the South Dakota physicians took place at Watertown, S. D., May 22, 23 and 24. The attendance averaged over 100. A program of exceptionally good papers was presented by men from various parts of the state and illustrated the class of men who are practicing in South Dakota. The average easterner would be surprised to know the men of education and brains who are practicing among the hills and over the prairies of that progressive state.

The organization of district societies is developing rapidly, and the class of men who compose the county and district meetings would call for favorable comment. Men in far-away portions of the state give a week of time for the state meeting.

It is gratifying to note the character of the men who make up this organization—men who are up in every detail. Bacteriologists, pathologists, and clinicians may be found in small towns. The old-time practitioner is conspicuous

by his absence. Young men who are trained in good schools, men who have studied abroad, men who can write interesting clinical papers gleaned from experience of hard-fought battles and who are dependent upon their own resources, are the men who make a progressive medical society. Such is the organization in South Dakota.

The spirit of fraternalism is evident, and the cordial mingling of medical men who are friendly and earnest is a striking feature in South Dakota. If there is an undercurrent of politics in the State Society, it is of the better sort, the sort that makes good doctors and good citizens.

South Dakota has an excellent medical law, and its influence is felt over the entire state. The people have been educated, and the legislature is in sympathy with the medical profession.

The cities of South Dakota are prosperous, and there is every reason to believe that the influence of the medical men is widespread and satisfying. Many of the medical men are prominent in business circles, and a large number of the profession have a competency that enables them to practice their profession without the fear of poverty and commercialism that so often is the cause of jealousy and backbiting.

The state organization has about 250 members with 9 districts fully organized and the prospects of a membership of 300 or more before the end of the year.

And, no doubt, all this, and perhaps some more, can be said of the North Dakota association which met a few days earlier, but the editor was unfortunately prevented from attending that meeting as he had planned to do, and so cannot speak from direct observation.

IMAGINARY STOMACH AFFECTIONS

Déjérine and Glaucker, in the *Presse Médicale*, call attention to a class of patients who are the victims of psychic or nervous forms of stomach troubles. Other French writers speak of false "urinaires," false "génitiaux," and false "cardiaques." Many of these phobias are secondary to neurasthenia. Déjérine believes that a large number of these false gastropathies are the direct result of therapeutics. The physician treats some transient digestive disturbance, and thus attracts the attention of the patient to the stomach.

As a result of this suggestive method of diagnosis and treatment the neurasthenic becomes introspective and depressed. His mental field of vision is centered upon a special organ, and he rushes from one physician to another and

not infrequently lands on the surgeon's table. His gall-bladder, stomach, or appendix is illuminated by nature's light and searched for evidences of disease. If there is a shadow of doubt, the organ is resected or explored. His recovery is confidently predicted, and his hopes raised to a high pitch only to be lowered after a few weeks or months. He again drifts over the seas of medicine or surgery until he either becomes a confirmed invalid or until he lands among the faddists, and is led to think his sufferings are unnecessary. His mind is relieved for a time, and he becomes convinced that the doctors are fakirs and that his cure lies within the province of the mystics. In some instances he is permanently benefited, because his attention is thoroughly diverted; he becomes interested in an occupation and ascribes his cure to unnatural methods, but, in reality, he is cured by change in his view-point. The larger number of neurasthenics, however, who suffer from phobias and who experience divers treatment from many medical men or charlatans, retain their symptom group until nature or environment effects a cure after many years of waiting.

These phobias should be recognized early by the practitioner, and a suitable regime be outlined for present and future guidance. Each individual should be carefully studied as to his ancestral tendencies, his early life influences, and his present mode of life and occupation. A careful consideration of his defects will often furnish the key-note of treatment. The influence of deficient physiological functions must be studied relative to the effect upon the nervous system, and, if possible, a balance established that will make him comfortable at least. The effect of suggestion upon his mental sphere must be constantly kept in mind by the practitioner. The nervously unstable and depressed individual is responsive to good or bad suggestions, and it should be the study of the physician to skillfully avoid anything that may in any way discourage the neurasthenic.

The simple life, out-of-door interests, the avoidance of fatigue, both mental and physical, and a cheerful personality in the form of a medical advisor, are the chief factors in the restoration from strange sensations that are now recognized as phobias in persons of psychoneurotic construction.

MINNESOTA STATE MEDICAL ASSOCIATION MEETING

The attendance at the State Association this year will probably be the largest in its history, the organization of county societies through-

out the state having greatly increased its membership.

Anticipating this large attendance and for the purpose of adding a number of important, interesting, and instructive exhibits, the committee on arrangements has secured the large hall on the eighth floor of the Masonic Temple. A series of anatomical, pathological and interesting embryological specimens will be shown; and a number of clinical and physiological experiments will be made. The State Board of Health, City Board of Health, and the Tuberculosis Committee are to arrange a variety of instructive exhibits, and each demonstration, or exhibit, will be in charge of a competent person.

There will be a separate room for the House of Delegates and a large exhibition hall for instrument and drug houses. The committee has also planned to have installed long-distance and local telephones, and to furnish a public stenographer and typewriter, messenger service, etc. A number of pure-food exhibitors have promised to serve some delicate liquid refreshments.

The entertainment committee has been carefully selected, and will be large enough to see that each member from outside has a good time. Ladies coming with physicians from out of town will be entertained in various ways by the local physicians' wives during the time of the Association meeting.

On Thursday evening, June 21st, the Hennepin County Medical Society will entertain the State Association with a trolley-ride excursion to Minnetonka, a boat-ride on the lake, a supper at Tonka Bay Hotel, and a visit to the new Big Island Park, where each individual member of the party may seek out his favorite method of enjoyment, with the opportunity of returning home after the last show is over.

Any member of the Society may bring his wife, daughter, or friend on this excursion, by notifying Dr. A. E. Benjamin, Chairman Entertainment Committee, three days in advance, and by the payment of \$1.50 for each extra person invited. The members themselves will be furnished tickets free.

TO CHINA AND JAPAN

Dr. Alex. J. Stone, of St. Paul, is organizing a party of physicians, with their families and friends, to visit China and Japan. If a party of one hundred can be raised the rate for the entire trip from the Twin Cities will be \$700, including sleeper and dining-car service on the railroad to Seattle, and transportation and

hotel charges throughout the trip. The time of starting will be about July 21st.

Can one imagine a more delightful or a cheaper trip? And, moreover, a trip in such company will not be without its professional advantage; the professional experience must of necessity form no small part of the conversation of a body of men thrown together for two and a half months.

We heartily commend the trip to our readers, and we know of no one better prepared to conduct a body of physicians into the presence of the Mikado and the Empress Dowager than the genial Dr. Stone.

The Great Northern Railway Company would be more than anxious to make the trip a memorable one, in order that through its influence travel may be started in this direction.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MÉDICINE

The regular meeting of the Minnesota Academy of Medicine was held in the West Hotel, Minneapolis, Wednesday evening, May 2d. In the absence of the president, vice president and secretary, Dr. William Davis was elected president and Dr. C. M. Carlaw, secretary, pro tem. There were 18 members present.

The June meeting of the Academy was suspended by a unanimous vote of the society on account of its usual date conflicting with a meeting of the American Medical Association.

Dr. Frank Todd reported a case of mastoid operation of unusual interest. The patient was a young woman under the medical care of Dr. Thos. S. Roberts. The usual operation was performed, but while considerable serum welled up, no pus was found until near the antrum, and then only in small amount. The temperature after the operation ran from 99° to 100°. Vomiting, which was frequent before the operation, did not subside, but continued after the operation. On the fourth day the patient showed some mental inability. The urine now contained albumin. The next day the patient grew drowsy and stupid, and became delirious. The vomiting at this time became less; temperature 99°; pulse 90. After a consultation with Drs. Spratt and Roberts the case was diagnosed as one of meningitis, and an unfavorable prognosis given. These symptoms continued for two and a half days when she regained consciousness and rapidly grew better. The albumin disappeared

in the urine, and now, three weeks later, she is quite well.

Dr. Roberts believes the case to be one of chloroform or iodoform poisoning.

Dr. Williams, in discussing Dr. Todd's case, said he believed that there were some cases of otitis meningitis that, undoubtedly, got well, and he cited a case of a girl of 15, who, after an attack of scarlet fever, had a mastoid abscess and meningitis symptoms. When opened, pus was found in only small quantity in the antrum. Dr. Shimonek trephined behind the ear. The dura was found to bulge. The brain was probed in several directions, but no pus was found. Serum in considerable quantities followed the extraction of the needle. This patient got well. It was undoubtedly a case of otitis meningitis. He was inclined to believe that Dr. Todd's case was similar in character and that a spontaneous resolution occurred after relieving the primary cause in the mastoid.

Dr. Sneve reported a case of Jacksonian epilepsy which he operated upon for Dr. Boeckmann, and removed a four-ounce fibrosarcoma tumor from the brain. The patient died eight days after with cerebritis and meningitis.

Dr. Sneve also reported a case of brain symptoms following an operation for mastoid supuration. The boy became stupid and indifferent. Paralytic symptoms occurred on the left side. The right side of the skull was opened and the brain probed, but no pus was found. Following the operation the boy grew worse, but in a few days began to recover. He is now improving rapidly.

Dr. Benjamin reported a case of ruptured gall-bladder in a man 45 years of age. When the patient arrived at St. Barnabas hospital his pulse was 160. The urine was very deficient in quantity, and contained much albumin and many casts. The abdomen was distended and very tender. The patient was in an extreme degree of collapse. On opening the abdomen bile poured out. There were extensive adhesions. No gall-bladder could be found. The abdomen was drained with a long drainage-tube. The patient is now convalescing, and will be able to leave the hospital soon.

Dr. H. B. Sweetser reported a case of a lad 15 years of age from whom he had removed two gall-bladder stones by the suprapubic route. The one stone was about the size of an almond and showed the usual deposits on its surface; the other stone was much smaller and showed four well shaped facets. Its surface was perfectly smooth with no deposits whatever, and had all the clinical appearance of a gall-stone.

Dr. J. W. Little cited a case of a boy for whom he crushed a bladder-stone, and on examining the fragments found the nucleus to consist of a piece of chewing-gum.

Dr. Leavitt reported two cases, showing the therapeutic benefit of veratrum viride in puerperal eclampsia. The first patient had repeated convulsions for 24 hours before the use of the drug. In this case he removed twenty-four ounces of blood by venesection, and later gave ten minims of Norwood's tincture of veratrum hypodermically. No convulsions followed its use. The second case had three convulsions previous to the administration of 15 minims of veratrum hypodermically. This was given in the morning, and the pulse quickly fell to 75. In the evening labor pains commenced, and with the onset of the pain there was another slight convulsion, for which another 15 minims of veratrum was given hypodermically, after which no convulsion occurred. Both patients recovered.

Dr. Williams then read his paper entitled "The Present Best Treatment For Middle Ear Suppuration."

Dr. Todd, in discussing Dr. Williams' paper, said that all suppurative diseases of the ear were dangerous to life and hearing. Boracic acid insufflation is dangerous. Laudanum and sweet oil, a common household remedy for such troubles, is useless. Hot irrigation is valuable in some cases. The local depletion by leeches from the region of the ear in acute inflammation helps, and aids in preventing the extension of the disease, and also brings about relief from pain. He advised the early opening of the mastoid abscess. We should not wait in these cases for the presence of edema and other common symptoms. As a rule when these symptoms occur the disease has become more dangerous. He advised operation when the symptoms were persistent even though they were not severe.

Dr. Alex. Colvin showed two temporal bones illustrating, very beautifully, the results of mastoid suppuration.

Dr. Williams, in closing the discussion, said that formerly he used leeches as a matter of routine in most all of his cases. In some cases they appeared to do good and in others they did harm. For some years past he has discontinued their use entirely. He drew attention to the presence of marked tenderness at the tip of the mastoid process in some cases of acute middle-ear disease. The reason for this tenderness has not yet been explained.

C. M. CARLAW, M. D., Secretary pro tem.

ANNUAL MEETING OF MINNESOTA
STATE MEDICAL ASSOCIATION

The thirty-eighth annual meeting of the State Association will be held in Minneapolis on June 20th and 21st, the House of Delegates meeting on the 19th, at 2 p. m.

PROGRAMME

Wednesday, June 20th—9 a. m.

- 1 Retroperitoneal Sarcoma,
DR. W. D. SHELDEN, Minneapolis
- 2 Carcinoma of the Breast. Lantern Slides,
DR. J. CLARK STEWART, Minneapolis
- 3 Pneumonia. Its Present Day Status and Treatment,
DR. S. H. BOYER, Duluth
- 4 Pulmonary Consumption,
DR. L. C. WEEKS, Detroit
- 5 Anaerobic Cellulitis with Report of Cases,
DR. J. W. LITTLE, Minneapolis
- 6 Open Methods of Skin Grafting,
DR. W. D. KELLY, St. Paul

Wednesday, June 20th—2 p. m.

- 1 Cardio-Vascular Regulation During and After Operation,
DR. HENRY W. COOK, Minneapolis
- 2 Cardio-Spasm, with Report of Cases,
DR. H. S. PLUMMER, Rochester
- 3 Notes on Ocular Syphilis, with Reports of Two Unusual Cases,
DR. E. S. STROUT, Minneapolis
- 4 The Objectionable Influence of Proprietary Medicine Upon the Young Practitioners,
DR. W. S. FULLERTON, St. Paul
- 5 The Business Problem of General Practice at the Present Time,
DR. CHRISTIAN JOHNSON, Willmar
- 6 Choreiform Manifestations in Middle and Advanced Life, with a Report of Cases,
DR. ARTHUR S. HAMILTON, Minneapolis
- 7 Gastroenteritis in Children,
DR. HELEN HUGHES, Mankato
- 8 The Medical Expert Witness,
DR. J. W. ANDREWS, Mankato

Thursday, June 21th—9 a. m.

- 1 President's Address,
DR. C. H. MAYO, Rochester
- 2 Podagra,
DR. H. L. STAPLES, Minneapolis
- 3 Some Features of Osteo-Myelitis,
DR. ALEX. R. COLVIN, St. Paul
- 4 Grave Errors in the Diagnosis of Typhoid Fever,
DR. SOREN P. REES, Minneapolis
- 5 The Operative Treatment of Chronic Empyema of the Maxillary Sinus with Special Reference to the Intra-nasal Method,
DR. WM. R. MURRAY, Minneapolis

- 6 Three Goitre Cases of Especial Interest,
DR. GUSTAV SCHWYZER, Minneapolis
Thursday, June 21st—1 p. m.
 - 1 Relation Between Pathology and General Medicine,
DR. F. F. WESBROOK, Minneapolis
 - 2 The Results of Treatment by Combined Supra-Pubic and Perineal Drainage in Three Cases of Rupture of the Urethra.
DR. H. P. RITCHIE, St. Paul
 - 3 Ulcer and Cancer,
DR. CHRISTOPHER GRAHAM, Rochester
 - 4 Pyloric Stenosis in Infants, with Report of Two Cases.
DRS. W. R. RAMSEY and JUDD GOODRICH, St. Paul
 - 5 Glenards Disease,
DR. GEO. DOUGLAS HEAD, Minneapolis
 - 6 Accidental Perforation of Uterus During Surgical Manipulation,
DR. H. B. SWEETSER, Minneapolis
- Adjournment at 4:30 p. m. for Trolley Ride.
Thursday evening, June 21st, the State Association will be entertained by the Hennepin County Medical Association.

RED RIVER VALLEY SOCIETY

The Red River Valley Society held its quarterly meeting in Crookston, April 24th. The following program was carried out:

"The Surgery of the Gall-bladder and Biliary Passages," by Dr. J. T. Rogers, St. Paul.

"Perforating Wounds of the Eye, with Report of Cases," by Dr. F. Mitchell, Euclid.

"Report of Case of Perforated Gastric Ulcer," by Dr. T. Bratrud, Warren.

The next meeting will be held in Crookston, July 24th, 8 p. m.

THEODORE BRATRUD, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A stated mid-monthly meeting of the Society was held May 21st, Dr. F. C. Todd, the president, in the chair, and 26 members present.

Dr. G. P. Crume read a paper on "The Diagnosis of Early Syphilis."

Dr. H. L. Ulrich and Dr. S. E. Sweitzer demonstrated the organism of lues (*spirochaeta pallida*), and gave a review of the literature of the subject. The papers were discussed by Dr. John Armstrong, of St. Paul, and others. The following is the program of the next regular monthly meeting, June 4th:

"Convergent Squint, with Special Reference to Early Treatment," by Dr. E. S. Strout.

"Thoughts on Things Connected with Infant Feeding," by Dr. F. A. Knights.

"Calorimetric Method of Infant Feeding," by Dr. J. P. Sedgwick.

C. H. BRADLEY, M. D., Secretary.

NEWS ITEMS

Dr. T. Thams has located at Maddock, N. D.

Dr. George D. Crossette has located in Motley.

Dr. T. W. Hovorka has moved from Silver Lake to Glencoe.

Dr. D. E. Rouse, of Waubay, S. D., has moved to Hamilton, N. D.

Dr. August Gronerud has returned to his old field of work at Kennedy.

Dr. I. Sverre, of Sisseton, S. D., is doing post-graduate work in Chicago.

The physicians of McHenry County, N. D., organized a county society.

Dr. A. Cyr, formerly of Ghent, has succeeded Dr. Germain, of Barnesville.

Dr. E. B. Dougherty, of the Moore Hospital, Eveleth, will locate at Duluth.

Dr. E. J. G. Schultz, of Wilmot, S. D., is in Chicago for post-graduate work.

Dr. George H. Steele has moved from Havana, N. D., to White Rock, S. D.

Dr. C. A. Vogel, of Illinois, has formed a partnership with Dr. R. V. Williams, of Rushford.

Dr. S. E. Muir, of Winona, after undergoing an operation for gall-stones, has returned to his home.

Dr. J. M. Hilger, who has been practicing for a year and a half at Iona, has returned to Mazepa.

The Grand Forks (N. D.) District Medical Society appropriated \$100 for San Francisco physicians.

Dr. C. V. Winsett, a recent graduate of the Col. of C. and S., Chicago, has located at Wolford, N. D.

The engagement of Dr. B. J. Branton, of Atwater, to Miss Alice Brown, of Morris, is announced.

The new hospital building at Ortonville is now above the basement, and will be rapidly pushed to completion.

Dr. Haldor Sneve, of St. Paul, has gone to Europe for four months. He will visit the principal surgical centers.

Dr. J. C. Rothenburg, of Sleepy Eye, has returned from New York, where he has been doing post-graduate work.

Dr. Jules Gendron, of Grand Rapids, is reported to be seriously ill. He was taken to St. Paul last month for consultation.

Hereafter when Stillwater physicians cross the St. Croix to practice in Wisconsin they must have a license which will cost \$25.

After having occupied one office for thirty years, Dr. A. E. Spalding, of Luverne, has moved into "more sumptuous quarters."

Dr. S. P. Johnson, of Leeds, N. D., has purchased the practice of Dr. E. M. Pierce, of Rugby, N. D., the latter having located in Grand Forks.

The new building of St. Raphael's Hospital, at St. Cloud, was open last month. It is a four-story structure with a high-basement story and cost about \$60,000.

Dr. Henry Wildow, of Worthington, accompanied by his wife, will sail for Europe on the 7th inst. The doctor will spend several months in Berlin studying surgery.

Dr. D. R. F. Powell, known as "White Beaver," died last month. Dr. Powell was a man of no mean attainment, in medicine and other lines and lived a life of usefulness.

The question of the right of Christian Scientists to practice medicine was recently brought before the House of Commons, and action deferred pending the trial of one Dr. Adcock, a scientist, for manslaughter.

Prof. S. Trendelenburg, of Leipsic, Germany, Dr. C. S. Scudder, of the Massachusetts General Hospital, and Dr. W. L. Rodman, of Philadelphia, were among the visitors to St. Mary's Hospital, Rochester, last month.

At the annual meeting of the Dodge County Medical Society the following were elected officers: President, Dr. C. S. Bigelow, Dodge Center; vice president, Dr. F. F. Clifford, West Concord; secretary-treasurer, Dr. E. E. Harrison, West Concord.

Miss Edith Rommel, president of the Hennepin County Graduate Nurses' Association, presided at the May meeting of the society, and gave an extended and interesting account of the work of nurses on the Pacific coast, where she has been several months.

SELECTED RECIPES FOR PHYSICIANS PRESCRIBING

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NEW ORLEANS

PUBLISHER'S DEPARTMENT

CHRONIC AND RECURRENT COUGHS
AND THEIR TREATMENT

Abstract of Article by J. E. Alter, M.D.

In treating coughs we quite often encounter obstinate cases, which, no matter what combative measures may be instituted, will continue without abatement. Such cases are best classified as the chronic cough and the recurrent winter cough. Both of these classes are extremely obstinate in their course and yield reluctantly to treatment. They are usually of long duration, and, while not in themselves directly dangerous, may become so by inducing emphysema and bronchiectasis.

In the great majority of chronic and recurrent winter coughs, the basic trouble lies in a low form of inflammation of the bronchial mucous membrane, especially that of the bronchioles.

In many cases I have used Codeia, but lately I have been having much more success with another derivative of opium, i. e., Heroin. In comparing the results obtained from the use of these two drugs, I notice that heroin will not constipate the patient, nor will it have the stupifying effect characteristic of codeine. Another advantage possessed by heroin is that it is effective in young children, in very small doses.

I had been accustomed to prescribe heroin alone, but about a year ago my attention was called to a preparation of that drug, Glyco-Heroin (Smith). Upon giving it a good trial I found that it gave me better results than obtained when heroin alone when given, and much more quickly. Glyco-Heroin (Smith) has one distinct advantage over plain heroin in that it can be given for a long time without ill effects, and in the class of patients in question, this is, indeed, a most important feature. During the past year and a half I have treated a number of cases and recurrent winter coughs with Glyco-Heroin (Smith) and have obtained uniformly good results.

Example.—A. L. Salesman, aged 28. I saw this patient early in the spring of 1903. He is robust and of good habits. He consulted me concerning a constant cough which had troubled him for over a year. It was usually worse in the morning and after meals, and accompanied by expectoration of thick muco-purulent matter. Sometimes blood-stained, and especially so after a severe paroxysm. This circumstance preyed upon his mind considerably—he thought he had consumption. I learned that he had had a severe attack of acute bronchitis during the spring of 1902 and had been coughing ever since. Phy-

sical examination excluded tuberculosis. The diagnosis was chronic bronchitis, sequential to acute. The patient was immediately put on Glyco-Heroin (Smith), and the same hygienic measures ordered as in Case 1. Here again the financial condition of the patient precluded change of climate. In addition to the Glyco-Heroin (Smith) the patient was given syrup of hypophosphites as a tonic. I did not see him again until last October. He then reported himself absolutely free from cough. He continued taking the Glyco-Heroin (Smith), and, during the present winter, has not experienced any return of the trouble. In this case a complete cure was effected by means of quieting the cough and stopping the irritation of the mucous membrane, in this manner allowing the restorative powers of the body, aided by the tonics and good hygiene to accomplish a cure.

A PERFECT ANTISEPTIC

It is just as important for a surgeon to have a good antiseptic as it is for him to have good instruments for him to perform his operations. Campho-Phénique is an antiseptic that is used by all prominent surgeons as a dressing following the operation. It not only destroys the bacterial growth, but builds up the tissues as well, leaving the flesh in a healthy condition.

See our advertisement in this magazine.

RHEUMATISM. REPORT OF A CASE

The patient was a farmer, 22 years old, a hard drinker, with a history of one previous attack of rheumatism. The present attack was ushered in with a chill, followed by sweating, severe pain, and high temperature six days before I saw him. I found him suffering with intense pain in the back and hip, temperature 105°, pulse 140, respiration 38. He was unable to sleep and was very restless. Urine showed the presence of urates, uric acid, and phosphates in abundance. Believing this to be an ideal case in which to try uric-antagon I prescribed a teaspoonful every three hours in a glass of water. I also gave him calomel 2 grs., soda 3 grs., podophyllin 1-3 gr., one powder every four hours, and ordered the patient bathed in warm soda water every three hours. This treatment was followed for twenty-four hours and on my next visit I found the patient resting easier with less pain in the back and hip and temperature somewhat reduced. The treatment was continued with the addition of cascara to open the bowels and in six days the patient made a complete recovery. From the rapid improvement noted in this case I am satisfied that uric-antagon has a marked influence in aborting attacks of rheumatism.—C. Davis, M.D., Tullos, La.

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THE MEDICAL PROFESSION AND THE ISSUES WHICH CONFRONT IT*

WILLIAM J. MAYO, A.M., M.D., F.R.C.S., EDIN.

ROCHESTER, MINN.

The American Medical Association begins its fifty-seventh Annual Session under the most auspicious circumstances. After an interval of forty-one years it again meets in Boston, the guest of this great commonwealth which has ably upheld the highest medical traditions since the founding of New England.

Another cause of felicitation: The sectional differences in New York have been overcome, and the Empire State, for the first time in twenty-five years, presents a unified delegation.

The House of Delegates of the American Medical Association, which technically is the American Medical Association, represents directly about 55,000 and indirectly the 120,000 regular practitioners of medicine in the United States. The official organ, *The Journal*, reaches each week over 43,000 subscribers, and, under the able editorship of Dr. George H. Simmons, has become the leading professional magazine in the world.

The medical profession is to be congratulated on these evidences of a useful organization, but much remains to be done. In his individual capacity the medical man has not been found wanting. Go where you will in civilized lands, you will find the physician self-sacrificing, patient, and charitable, upholding the honor and dignity of his noble calling. Collectively medical men do not have the influence which we might expect, and without which great movements for the wel-

fare of humanity can not be carried on. A lack of unity has prevented a realization of our hopes, and if we are to gain and maintain the pre-eminent position to which we are entitled we must unite for the common good.

The present organization of the American Medical Association is but a beginning. We must further the interests of this body unselfishly, not for ourselves alone, but that we may better fulfill our sacred obligations to mankind. The people must be educated up to a point where they can understand the broad humanitarianism of modern medicine. Society appreciates the saving of a sick person's life by the skilled physician, but fails to see the priceless gifts to the human race made by preventive medicine and sanitary science. It views everything in detail and misses the perspective. We have failed to secure the support of the mass of the people to much-needed sanitary reforms, because we have appealed to them as one individual to another without the weight of an authoritative organization.

That the people are ignorant of medical affairs is due to bad education rather than prejudice. They are more than two decades behind advanced medical thought. It is our duty to keep them better informed. The theory of medicine did not contain the essential principles of a science until within the last quarter of a century. Originally a part of priestcraft, the profession had its beginnings in a time of mysticism and superstition. Anatomy, gross pathology, and chemistry were among the early foundation stones

*President's Address at the fifty-seventh Annual Meeting of the American Medical Association at Boston, June 5-8, 1906.

which made progress possible. Clinical treatment was based on a very few specific remedies and a considerable number of drugs of proved value in the cure or alleviation of disease, but, lacking a sound theory of causation, the results were not much better in the average self-limited malady than those claimed by the various "systems" based on the giving of inert or useless remedies, which, like the incantation of the Indian medicine-man, kept the patient and friends interested until cure came about through natural processes. The public found that the large majority of sick persons got well under any, all, or no treatment, and, not rightly understanding the reason, have never been able to comprehend why one method or form of treatment, as long as it apparently yielded about the same average of results, was not as good as another.

The germ theory, promulgated by Pasteur and given surgical significance by Lister, strengthened our foundation by adding to it the long-sought-for causation of the majority of diseases, and this, with the aid of experimental research, has led the practice of medicine out of the wilderness, and established it as one of the exact sciences.

New and fundamental truths have followed each other so rapidly that we have scarcely been able to digest them, and much less can we expect the public to have kept pace. The layman's view is that of twenty-five years ago. He accepts with avidity new dogmas and "pathys" based on theories incredibly foolish in the light of modern investigation, and we have allowed him to become fixed in these beliefs. We have permitted the public to be educated by "patent-medicine" advertisements and the voluble charlatanism of the commercially interested. In return we are classed with these schemers, and efforts for the general good are believed to be selfishly inspired. The Utopianism of our profession is too idealistic for ready comprehension in this commercial age. The time has come for the public to be taken into our confidence: if we wish better results we must enlighten the people, for with them lies the final word.

THE PROFESSION AND THE PUBLIC

General sanitary matters of the greatest importance are becoming understood through medical influences. The public has been and is being educated in regard to the "great white plague," tuberculosis, and statistics are beginning to show the effect of this diffusion of knowledge. In Massachusetts and some other states a committee has been appointed in each district to promulgate measures for the relief and control of tuberculosis. This should be imitated in every state in the Union.

We can already see the good which has re-

sulted from the teaching of the habits of mosquitoes, the short distances they travel from their breeding places, and especially the necessity for the quarantine of patients afflicted with yellow fever and malaria, not directly to protect mankind, but to prevent infection of the little pests who act as carriers of the contagious microorganisms.

Society must be taught the early symptoms of cancer, the greatest foe of humanity, that its manifestations may be recognized while in the curable period. A propaganda of this kind, inaugurated by the profession of Germany, has borne fruit.

The typhoid fever crime of cities through polluted water supply is not the least of the many branches of popular education. There is no reason why a man who has become infected with typhoid from a city's neglect should not sue for damages, as he would for personal injury sustained from falling through a defective sidewalk. Unavoidable sickness is bad enough, but when we stop to consider that the life of the individual is worth \$5,000 to the state, and that those who recover undergo great disability and expense, the continuance of unsanitary conditions is criminal. The experience of Vienna, which was converted from a typhoid center to one of freedom from such outbreaks by bringing in a pure water supply, has now been repeated over and over again in every civilized land. Yet hundreds of deaths from this preventable source yearly attest that the lesson has not yet been learned.

How can the work of education be best continued. The answer, as shown by our very efficient chairman of the Committee on Organization, Dr. J. N. McCormack, is through the local society. Occasional meetings to which the public shall be invited must be devoted to questions of general interest, and the proceedings published in the local newspapers. The county society must become the unit, and the allied professions of pharmacy and dentistry urged to attend and take part in the deliberations.

To the Ladies' Home Journal and Colliers' Weekly the public owe the successful crusade against poisonous substances and intoxicating beverages which are sold under the guise of "patent medicines," patent only in the sense that the name is copyrighted; the constituents can be changed at any time and in any way. Do you think that our American mothers will continue to give "Kopp's Baby Friend" and "Mother Winslow's Soothing Syrup" to their babes when they find that these mixtures contain opium and that instead of securing rest the little ones are narcotized and that many deaths are directly attributable to this cause? Will the American peo-

ple continue to use Bromo Seltzer and similar dangerous preparations to an extent which causes them to exhibit blueness of the skin surfaces from poisonous coal-tar products, or become victims of drug habits from cocain catarrh cures when they discover the harmful and dangerous character of these agents?

Will our prominent people, statesmen, politicians, ministers, and ladies of note, continue to allow their photographs over signed testimonials to be published, telling their fellow-citizens how much better they have felt after taking Peruna, Warner's Safe Cure, and the various Nervines and Tonics when they find that most of these preparations depend on alcohol for the stimulating effects which they describe? The success of most "patent medicines" depends on the fact that they contain drugs and stimulants which create a craving and must be repeated. Once get the public conscience awakened, and we shall have a demand that every "patent medicine," before being sold, shall have its exact component parts printed on its label, and its claims to cure verified by scientific investigation. The action of the Postoffice Department in denying the use of the mail service to some of the worst offenders against common decency is to be commended.

PUBLIC HEALTH LEGISLATION

One of the few misfortunes of the individual freedom afforded by a republican form of government is that it enables the most ignorant man, through prejudice; to interfere with and delay needed legislation, with the result that by the time the law can be passed, the immediate object to be obtained has often disappeared.

In Germany compulsory vaccination has practically caused smallpox to disappear from the army and country, a person properly protected being immune. In the state of Minnesota inability to enforce vaccination in the late smallpox epidemic permitted, from a few sources, 27,876 persons to become infected with this disorder; all due to a small but vociferous band of anti-vaccination agitators.

Contagious disease in any place is not a matter of local or state interest alone, as the ease and freedom of transportation render local control impracticable and properly place it in the hands of the general government.

The keenness with which the American people are watching the affairs at Panama argues well for the future. The communication of Dr. Charles A. L. Reed awakened public interest. His portrayal of red tape and obstruction to sanitation in the Canal Zone has resulted in obtaining for that most able army medical officer, Colonel Gorgas, power to carry out the necessary reforms and has made the Canal Zone the most sanitary place in Latin America.

Compare our record in the Spanish-American War with that of the Japanese in the war with Russia. We had 14 deaths from disease to 1 from wounds, and more than 95 per cent due to disregard of the simplest problems in sanitation—therefore, unnecessary and avoidable. In the Japanese army there were 4 deaths from wounds to 1 from disease, a difference of 56 to 1. This was not due to the fact that the Japanese had superior knowledge, but that their medical officers were thoroughly organized and in sanitary matters were supreme. The knowledge which they used was obtained in western institutions and was the product of the Occidental, not the Oriental, civilization.

Our army and navy medical departments have worked intelligently against overwhelming odds. Their individual members have international reputations honestly achieved. Their schools for the special training of their men are in the highest degree efficient and deserving of every praise; but the departments have been so small as to be unable to act even as nuclei about which in time of war competent forces could be gathered, and the militia of our country enter into conflict fearfully handicapped. The indications, however, are that these matters will now be rectified, and, if so it will guarantee to the patriotic American that should he again be called on to serve his country his enemies will be in front, and that he will not be destroyed by his own side through neglect of sanitary laws.

The United States Public Health and Marine-Hospital Service has been and is doing splendid work in sanitation. Its skilled investigators have revolutionized quarantine measures, and have placed preventive medicine on a solid basis. Their powers should be extended so that such unnecessary outbreaks as occurred in New Orleans shall not be repeated. They should be given control of national quarantine in all its phases.

MEDICAL EDUCATION, STATE LICENSURE, AND RECIPROCITY

What is needed is a higher standard of requirements and more and better supervision of professional schools. The Council on Medical Education is working hard, and is now in a position, not only to show what should be done, but to initiate needed reforms. No more important work has ever been taken up by the profession. At the present time medical education is uncontrolled, and each state has its own standard of requirements. We can not rid ourselves of dogmas and "pathys" until we can secure a universal primary law as to the minimum amount of knowledge on fundamental branches. To accomplish this the American Medical Association must co-operate with and encourage medical colleges to do better work. The profession owes

it to itself to investigate in some manner what the schools are actually doing, and to make it known whether or not they fulfill their obligations to the student. No well-conducted college could object to such reasonable supervision.

Another question of great importance is that of reciprocity in medical license. The conditions now are well nigh intolerable, and restrain the individual freedom guaranteed by the Constitution. The boundaries between states are imaginary lines; yet a physician on one side of a border can not relieve human suffering on the opposite side without becoming amenable to the law or subjecting himself to vexatious examinations which he has already successfully passed in his own state. This must be met and speedily by agreement between examining boards as to the minimum of requirements. After all, this is but a part of the educational problem. If we could solve this, licensing boards could at once adopt more uniform examinations and reciprocity.

RELATIONS TO INSURANCE COMPANIES, CORPORATIONS, ETC.

We come now to consider some abuses from which the physician suffers. It is a matter of professional pride that, in the general condemnation of the life insurance companies, although every other part of the control has been shown to be corrupt, no breath of scandal has touched the medical department. Yet the local examiner has the most cause of all to be dissatisfied. The New York Life, some years ago, cut the fee for examination 40 per cent, apparently not as a matter of economy, for at that time the most corrupt practices existed, but rather to enable the agent more easily to pass "new business" at any cost. This action has lately been imitated by the Equitable and some others, and has resulted in forcing the resignation of many of their best examiners. The general officers have taken great credit on themselves for voluntarily reducing their salaries 20 per cent. It is a rank injustice that the one body of men who have emerged clean from the insurance scandals should suffer the most for the crimes of others. A thorough medical examination to prevent fraud by the admission of unsafe risks is essential. With few exceptions the old-line companies pay a fair fee, and less should not be accepted. The casualty companies, such as the Maryland, are the worst offenders, and some concerted action should be taken to compel them to mend their evil ways.

Lodge practice is another scheme by which officers of an association draw salaries ostensibly to give medical services at a figure below the possible point at which a professional man can live and continue his education. The people are badly served, as competent physicians cannot be

secured to do the work, and the whole scheme is properly condemned by the various medical associations all over the country.

Public-service corporations abuse hospital privileges in a way that is no more or less than an open scandal. In Pittsburg the steel companies pay \$1.00 a day for the care of their injured men at the hospitals, and for the class of patients under discussion this can not be provided for less than \$1.60 per day. The companies pay the surgeons at the hospitals absolutely nothing for their services to its injured, which amount to thousands of dollars a year. The same condition exists with many of the large railroad and street-car companies and other public corporations.

Hospital abuse by patients who are able to pay, through the neglect and indifference of the trustees, is prevalent, and thereby the profession is robbed of just returns for labor, and the funds of charitable persons misused to an extent which is almost beyond belief. All hospitals should have competent individuals whose business it is to see that no one secures free treatment who is able to pay.

Some great hospitals go still further and receive any patient, rich or poor, allow him to have a suite of rooms and bath and several nurses if he can pay for the same, but will not allow him, even if he is willing to do so, to pay the surgeon who operates on or the medical man who takes care of him. If the patient is disposed to be more just than the trustees of the hospital, he can do so only by giving a gratuity at Christmas, as would be done with a servant. Such indignity should be resented by every right-feeling man.

It is a misfortune that the large majority of hospitals have no physicians among their directors. Hospital management is often extravagant and wasteful, due to official influence in furnishing comfortable berths for incompetent relatives or unfortunate friends in some salaried executive position.

Fortunately the list of grievances is not large, and I believe that they can be harmoniously adjusted if taken up with the proper authorities in a conciliatory spirit. Our first object must be to see that no poor person shall be subjected to the slightest inconvenience or annoyance, and that every worthy charity shall have our united support; but we must look to it that the charitable practitioner's time, knowledge, and skill shall not be misused.

THE PRACTICE OF MEDICINE AS A BUSINESS

It is a hard matter to adjust the financial side of the practice of medicine. That doctors are poor collectors and bad investors is a notorious fact, and makes them the easy prey of the vari-

ous investment "gold bricks." A physician owes it to himself, his family, to his profession, and especially to the community at large, to manage his finances well. Otherwise he cannot pursue his studies and give to the sick his best efforts, which they have a right to expect and demand. No sensible man enters on a medical career with a view of making money. I have never known a physician who has become rich solely from this source, and it is better so, for beyond that reasonable competence which leaves him free to pursue his life-work the care of money interferes with the highest aims of the true physician, and few who have been burdened with wealth have reached their ideal in a calling which makes no distinction between the rich and the poor.

One of the demoralizing tendencies in this commercial age is the money standard of success. Physicians are not called or chosen: accident or environment brings about their choice of profession. While professional life broadens the mental horizon and increases sympathy, it cannot change a man's nature, and men who are unfair in business affairs are to be found in our midst.

The one crying evil, which fortunately is not widespread, is the giving of commissions—in other words, the selling of the confidence which the patient has in his practitioner—to some specialist who will divide the fee in return for reference of the case. The one secretly takes money from the patient without his consent, and the other, in order to complete the bargain, charges more than he should. This is equally harmful to the one who receives and to the one who gives. Such matters cannot be kept secret, and I have personal knowledge of men of good attainments and remunerative practice who have been ruined through losing the confidence of their communities by this pernicious traffic. Some attempts have been made to justify it, but the very fact that it is secret shows that both parties are ashamed to have it known and is an acknowledgment of its moral obliquity.

Our relations with the allied profession of pharmacy are not on as ethical a footing as they were twenty years ago. Then the druggist was the faithful friend of the physician. Today, in putting up from 50 to 60 per cent of the prescriptions sent to him, the educated pharmacist cannot use his skill as a chemist, but simply acts as a distributor of copyrighted preparations which the physician calls for a few times only to take up with something new and leave the shelves of the druggist filled with the unused remnants.

Many physicians compound their own prescriptions, to the detriment of the pharmacist. The proprietary medicine people have managed this very cleverly; to the medical profession they

are continuously calling out that the druggist is "substituting;" with one hand they have given the physician remedies to dispense himself, and with the other furnished the druggist with "patent medicines" with which to compete with the physician, and these two natural allies have drifted apart. The average pharmacist cannot live on physicians' prescriptions alone, but he should be treated justly, and both physician and druggist would profit by mutual concessions to the great benefit of the public.

The higher grade of pharmaceutical houses already see the danger to honest pharmacy in the forced promotion of "ethical" and fake nostrums under catchy names, and it is to be hoped in the future, will confine themselves to the open compounding of legitimate preparations; and these and these only should be found on the advertising pages of reputable medical journals.

MEDICAL PROGRESS

Graduation from a college is merely a commencement of a life study of medicine. Therefore, young men without special training under competent teachers should not be encouraged in wanton assaults on major surgical diseases unless justified by necessity. The future will demand schools for advanced training for those who desire to do special work.

The recent graduate in medicine should begin in his county society by contributions to the newer methods which will be interesting to the older men. This should be his kindergarten; from there he will carry his papers to the district meetings; and at the end of five years he will be competent to bring useful material to the state society and later to the sections of the American Medical Association.

In the practice of medicine the student days are never over. There is so much to be learned that a long and industrious life leaves one with the feeling that he is but a beginner. The most important habit a young physician can form is the "daily study habit." Let him put in even one hour a day with the reading of journals and books of reference, and much can be accomplished. He should keep an account of the time, and if something interferes for a day he should charge himself up with it. A two-weeks' vacation means fourteen hours to be made up. Most men can do more, and no man has a right to do less, no matter how busy he may be. The leaders in our profession make a daily average of five or six times this amount of study the year round, in addition to the demands of an active practice.

The practitioner must make frequent trips away for the purpose of observation. In no other way can he avoid the rut of self-satisfied content, which checks advancement and limits use-

fulness. No amount of diligence as a student can take the place of personal contact with men in the same line of work.

What are the rewards of so laborious a life? They cannot be measured, because there is no standard of comparison. To realize that one has devoted himself to the most holy of all callings, that without thought of reward he has alleviated the sufferings of the sick and added to the length and usefulness of human life, is a source of satisfaction money cannot buy. I know many a man grown gray in the profession with little of a tangible nature to show as a result of his work, but who is not only contented with his lot, but proud to have served in the ranks, and who looks back on a life of privation and hardship for the benefit of humanity as a privilege which he is thankful has been vouchsafed him.

Let us continue to strive as individuals for the honor and dignity of our profession. In this we but follow out the aims and ideals of those who have gone before and prepared the way. But the great movements of the future cannot be brought about by individual action. They must be initiated and controlled by united effort, and in no other way can the epoch-making truths of preventive medicine be made to bear fruit. Unity is the spirit of the times; it marks the difference between the old and the new.

The vital need of the medical profession is a harmonious organization—an organization that will encourage right thinking and good usage among ourselves, help to secure needed medical reforms, compel redress of grievances, and promote and encourage the highest interests of its individual members; and in this lies the future usefulness of our profession as a whole.

NOTES ON EMPYEMA*

WITH A REPORT OF THREE CASES

By F. G. LANDEEN, M. D.

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The consensus of opinion in the medical profession is that the great majority of cases of empyema require surgical treatment of some kind. As to surgical methods: while the simpler and readier means of aspirating the pleura usually cause a marked temporary improvement and occasionally a permanent cure, the disease more frequently demands free drainage by incision through the chest wall, either with or without the resection of one or more ribs. On account of the operation required, the usually unfavorable general condition of the patient, necessitating rapid work, and, last but not least, the problems encountered during the after-treatment, the general practitioner feels that these are proper cases for treatment by the surgeon; yet the fact that they are usually encountered in general practice and the possibility that when skilled surgical attendance is most needed it cannot be secured, are reasons why the general practitioner realizes the necessity, not only of being qualified to make an accurate and timely diagnosis, but also, if occasion should require it, of carrying out the surgical treatment. I shall not attempt to furnish an elaborate treatise on this subject, but to give merely the history of three cases which I have treated during the past two years, with

some impressions drawn therefrom, not that they all terminated favorably, for unfortunately one proved fatal, nor with the idea that the treatment pursued was in all respects the best that could have been employed, but rather in the hope that they may present some interesting features.

Case 1. Miss F. L., aged 14, became ill with an attack of pneumonia on March 16, 1903. The temperature was then 104° F., the pulse-rate 146. The symptoms were modified somewhat by treatment, yet, while the pulmonary symptoms improved at the usual time and a crisis was expected, it did not appear, the temperature ranging from 102° to 104° F., and the pulse from 120 to 140, for a period of two weeks, with no sign of abatement. The continuous fever was apparently due to the commencement of pleural effusion during the period corresponding to the presence of pneumonic symptoms, as the breathing sounds were even then transmitted feebly, and the dullness on percussion was continuous. On March 31st the pleura was aspirated and pus found, of which a pint was withdrawn, when the process was discontinued on account of violent coughing and distressed breathing. A temporary reduction of the fever occurred. The cavity was again aspirated on April 4th when the process

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was continued as long as any pus would flow, the amount then removed being about 20 ounces. The temperature then fell to the normal, and the pulse-rate to 110. In a day or two slight feverish symptoms were again present. The condition was variable after that. At times the patient was seemingly on the road to recovery, still the temperature would seldom register less than 100° F., and the pulse continued rapid. She was treated mainly with tonics, laxatives, and resorptive remedies. On April 29th the pleural cavity was opened, two ribs being resected. Several pints of pus were found, with a large number of coagula and shreds. The quantity of the pus was surprising, as shortly before the operation little dullness had been found on percussion, and the breathing sounds, though chiefly bronchial in character, had been fairly well transmitted, it being rather the continued septic symptoms and anemia that had indicated the seriousness of the patient's condition. The lung had collapsed so as to leave a space so deep that it was barely possible to reach the nearest point of the pulmonary pleura by inserting the whole index finger through the opening in the chest wall. As the fluid only partly filled this immense cavity, this may be the explanation of the misleading nature of the physical signs to which reference was made. Drainage was maintained through two rubber tubes. Dressings were changed daily, the patient being then turned on her left side, which was the one affected, in order to facilitate the escape of the discharges, which amounted to several ounces daily for about a month. It was noticeable that the escape of pus between the times of changing the dressings, as indicated by the extent of saturation of the dressing materials, was often insignificant compared with that obtained by turning the patient after removing the dressings, especially when this was accompanied by respiratory exercises, such as taking a full breath, then bringing the expiratory muscles into full play, yet holding the breath, which would force the compressed lung nearer the chest wall, when the pus would come welling out. The patient's condition remained critical for several weeks, the pulse ranging from 120 to 150, with a variable temperature, which, however, would seldom exceed 102.5° F. The patient was given exercises once or twice a day with an apparatus constructed after the plan of Wolff's bottles. No irrigation had been used, and as the pus was still being formed rather freely I determined to irrigate the pleural cavity, in the hope that it would have a beneficial effect. For this purpose sterilized water was used, the temperature

of which was gauged with care. Not more than an ounce or two could have reached the cavity when the patient became very pale, respiration gasping with uncontrollable cough, frothy expectoration, and irregular heart action. The attempt at irrigation was promptly abandoned, and stimulants were administered. For more than an hour the pulse remained rapid and weak, and borborygmi were a constant and pronounced symptom. During the post-operative treatment the drainage tubes were removed about once a week for thorough cleansing, the evacuation of clots and debris, and inspection of the lung, which regained its elasticity so that its pleura came in contact with the parietal pleura five or six weeks after the operation. About this time one of the drainage tubes was removed; the other two or three weeks later, when the discharge had practically ceased, and the patient's general condition improved considerably. The left side of the chest had sunk in markedly, particularly the region corresponding to the course of the resected ribs. There was also some lateral curvature of the spine, with the concavity toward the affected side. This patient made a good recovery. A year after her sickness, besides being in excellent general health, her spine was free from lateral curvature, and the left half of her chest was filled out and apparently as well developed as the right.

Case 2. Miss E. N., age 12, had an attack of pneumonia beginning on April 4, 1904. The temperature and pulse ranged about the same as in Case 1, the general condition corresponding. In this case the right lung was the one affected. A crisis occurred on the sixth day, the temperature dropping to 98.6° F., and the pulse-rate to 112. This was the only time a record of normal temperature was obtained for a number of weeks. There followed a gradual rise of temperature, which varied from 99.5° to 103° F., it being usually from one to three degrees higher in the evening than in the morning, while the pulse gradually reached 140, the patient meanwhile becoming sallow and somewhat emaciated. In this case also the physical signs indicated the presence of some fluid in the pleural sac during the pneumonia. A week later its presence could be diagnosed by this means with a reasonable degree of certainty. In spite of medical treatment, the symptoms of effusion became more pronounced, and before the pleura was aspirated, on April 23d, the conditions were as follows: flat percussion note from axilla several inches down the side, and dullness extending as high as the clavicle; complete absence of breathing sounds over the lower half of the lung; prac-

tically no movement of the respiratory muscles on the affected side, while on the left side the respiratory movements were quite pronounced, resembling those of forced respiration, and the normal respiratory sounds were considerably exaggerated, yet, from the amount of fluid in the pleural sac, the right half of the chest was a little larger and the heart was slightly displaced to the left. The patient would almost continually incline the head toward the right shoulder. She had no cough, complained of no pain, and, while restless some nights, during others she would sleep for hours. Eighteen ounces of pus were withdrawn by means of an aspirator on the date mentioned, when the needle became clogged. The temperature fell to 99° F., and the pulse-rate to 114. After this the temperature gradually rose so as to be from 102° to 103° F., during evenings, with a pulse of 130 to 140. On April 28th an operation was performed as in Case 1, and the pleural sac found to be almost filled with pus and coagula. The space between the two pleural layers was three inches, with no sign of an effort at expansion of the lung. The patient remained feverish, with a high pulse-rate, for a long time. The febrile disturbances were usually less after the changes of dressings, when the pus was evacuated as thoroughly as possible. The pus continued to be formed very freely for several weeks. For this reason it was decided to change the dressings twice instead of once a day, and it was found that the patient did better under this plan. To aid in securing expansion of the lung she at first played a mouth-organ, and when she became a little stronger exercised with the water-bottles. The expansion was not complete and permanent until from six weeks to two months after the operation, when the temperature became normal, except for slight disturbances, which could properly be attributed to the maintaining of the opening in the chest wall, which was then allowed to close. The pulse was quite irregular at this time, and there was slight edema and soreness of the ankles for a few days, after she commenced to walk, symptoms which gradually disappeared. This girl regained her strength so as to be able to attend school in September, and since that time she has not lost a day from sickness.

Case 3. J. P., a full-blooded, healthy looking young man, became ill on Aug. 21, 1904, and was seen on the following day, when he was found to have symptoms of pneumonia, which increased in severity until, on the fifth day, his condition was almost hopeless. The inflammation by this time involved nearly the whole of the left lung, the pulse was 140, the face livid, and the upper air passages were considerably obstructed with mucus. Medical treatment failed

to improve these conditions, and venesection was performed as a last resort. Eighteen ounces of blood were withdrawn from the median cephalic vein. Some hours after that, in the evening, I saw the patient again, and found the pulse to be 120 and the other symptoms correspondingly improved. No well-defined crisis occurred in this case, and the temperature did not reach the normal until the eleventh day, when the pulse-rate fell to 88. If there was any pleural effusion during this febrile period it was probably small in amount, as the physical signs did not indicate its presence. A day or two after that, feverish symptoms were again present, and it was not long before it became evident that there was fluid in the pleural sac. On Sept. 8th more than a pint of pus was removed by aspiration. This caused a reduction of the fever, but in a few days the temperature rose to 102.5° F., and the pulse-rate to 135. On Sept. 12th an operation was performed, and the pleural sac was opened and drained by a similar method to that employed in the preceding cases. A quart or more of pus was found, and the cavity was two inches in depth. The immediate effect of the operation was improvement, but on Sept. 14th the temperature rose to 105° F., and the pulse became very rapid. The pleural cavity was then evacuated as thoroughly as possible and explored. Little pus was found at this time, but a little later it was noticed that in addition to the pus, coagula, and shreds, there escaped bits of layers of false membrane, friable, of a grayish-white color, and from one-sixteenth to three-sixteenths of an inch in thickness. These particles of pseudomembrane were noticed at almost every change of dressing for a number of days after that, and on one or two occasions, when the tubes were removed, were secured by the hand. The high temperature persisted in spite of the best drainage that could be secured, and its reduction by ordinary means had only a temporary effect. A swelling of the right knee developed, accompanied by severe pain. Two days later the left knee became similarly affected. The pain and swelling in both diminished considerably in a few days, while the general symptoms grew more serious. The ribs and soft structures about the opening in the chest wall showed no attempt at repair, the general septic symptoms increased, a rash with petechial spots appeared on the chest and abdomen, delirium supervened, and the patient died on Sept. 26th. A post-mortem examination showed that resolution of the lung had taken place, and that it had expanded to within an inch of the chest wall, that the pleural cavity was well drained, and the upper half had healed, the two layers of the pleura having firmly united. They were separated and explored to ascertain if there

were any circumscribed collection of pus, but none was found. The right lung and pleura showed no evidence of disease, nor did the heart. The pericardial sac contained about four ounces of fluid. Each knee-joint contained considerable pus, though its presence had not been suspected from the local symptoms.

While the cases just related indicate the necessity for evacuating the pleural cavity in the case of empyema, they also emphasize the fact that this procedure alone does not insure recovery, also that the issue depends largely on the after-treatment. Suppuration is apt to continue, requiring free drainage for a variable length of time. The fluid causes compression of the lung. It is es-

sential to secure its expansion, which is necessarily a gradual process, but may be possible, even in extreme cases, by the aid of systematic respiratory exercises.

Case 3, with an extensive pseudomembranous formation, presents some unusual conditions, and naturally raises the question as to whether a variation of treatment would not be advisable in a case of that kind, especially in view of the occurrence of what appears to have been a form of general septic infection. At any rate, it is well to bear in mind the possibility of complications, which should not be overlooked if they occur.

SOME OF THE CAUSES OF PAINFUL MENSTRUATION IN YOUNG GIRLS*

BY HELEN HUGHES, M. D.

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Menstruation, as far as our knowledge goes, may still be regarded as a phenomenon, none of the various explanations throwing much light on the subject. It cannot be looked upon as a result of civilization, because, with some differences according to race and climate, it is just as peculiar to the savage woman as to her civilized sister, nor can it be considered a deterioration of the race, for we find it mentioned as a common occurrence as early as the days of Rachael, the wife of the Patriarch Jacob.

That this congestion of the pelvic organs could occur without some reflex nervous disturbances is hardly to be expected, but when the pain is so intense as to reduce the patient to a state bordering on collapse it cannot be looked on as physiological. The causes of painful menstruation are as obscure as the cause of menstruation itself. Notwithstanding the fact that much time and labor has been expended on this subject there is still more conjecture than reliable information in our literature. Perhaps we have been too arbitrary, too inclined to frame a law for a trouble that is the result of so many different causes. Some years ago mechanical obstruction, which is in reality only the cause of a small fraction of painful menstruation, obscured the whole field to the investigation, while today nervous and circulatory disturbances crowd mechanical obstruction from sight.

To treat a case of painful menstruation intelli-

gently the actual cause must be found, and this end can be obtained only by a careful consideration of each individual case.

Three conditions are brought forward for discussion here, not because of their frequency, but of the readiness with which they are overlooked while their results are saddled on that convenient packhorse for unlabelled diseases, hysteria. These are cystic ovary, antelexion, and tortuous cervical canal.

Cystic ovary can usually be detected readily if examination is made per rectum. Ovaries, even those that are considerably enlarged, are difficult of palpation on account of their wide ranges of location. In examination per rectum a forceps can be attached to the cervix through the vagina, and the uterus with its appendages can be drawn completely into the true pelvis, where they are within reach of the examining fingers. The ovary lies in the posterior part of the broad ligament, and is separated from the touch only by the thin wall of the rectum. Cysts may be felt on its surface, and it is always extremely painful. Anyone who has done much pelvic surgery has observed that it is the little things that count. A woman can carry round in comfort an ovarian tumor of two or three quarts in capacity, while little cysts no bigger than a pea embedded in the capsule give intense pain. Our science at the present day affords us no better method of treating a cystic ovary than that of abdominal section, the removal of the cysts or cystic parts as described in any good surgery, and the replacing of the

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remains in the hope that degeneration will stop at this point. This is a tremendous effort to reclaim a cystic ovary, and in theory the outlook is not very promising. There is no particular reason why the process of degeneration should stop at this point. It would be interesting to hear from some experienced surgeon on the remote results of this treatment.

Anteflexion is a condition that is undoubtedly associated with painful menstruation. In spite of any number of theories to the contrary, the fact remains that when the axis of the cervix is within a few degrees of being in a plane with the axis of the body of the uterus, menstruation will be accompanied with pain of a pathological degree. This condition can easily be detected by examination. The body is often in a normal position while the cervix points toward the pubes and is hard, resembling gristle. Not unfrequently there is an ulcer or its scar in the acute angle made by body and neck. The appearance of the cervix suggests impeded circulation, while the rather flabby corpus shows evidence of malnutrition. Whatever is the cause of this condition we know that when the patient is anesthetized, the cervix drawn down and dilated, and the posterior fibres of the internal sphincter divided, the pain on menstruation disappears, in some cases permanently, in others for months when the dilatation may have to be repeated. In young married women a pregnancy is liable to occur after dilatation, and an uncomplicated labor will leave the uterus in a perfectly normal condition.

Tortuous canal is a condition that can be and is often overlooked. Sometime ago a woman

came to my office. She had been married eight years, but no pregnancies. She was thin and nervous, and gave a history of intense pain during menses. She had seen a good many physicians without obtaining relief, and was looked upon as hysterical by the doctors of her town. Her latest medical adviser proposed removing her ovaries for relief of her condition. On examination her pelvic organs appeared perfectly normal, the cervix alone showing any abnormality, it being rather long and slender. On attempting to pass a probe through the cervical canal it was discovered to be not only narrow but so tortuous that the instrument described a complete circle before entering the uterine body. Under the anesthetic graduated dilators were passed up to 23 cm., and for a week after a dilator of 17 cm. was passed without anesthesia.

She has had no menstrual pain since. She reported at my office last month, six months after her operation, and she looks well, having gained in flesh, and she is now pregnant.

This was a case liable to be classed under hysteria, and the woman doomed to pain and sterility. While, on the other hand, cases of nervous and circulatory disturbances are treated surgically with unsatisfactory results to both patient and doctor.

This patient has since given birth to a baby girl.

To sum up: A condition that arises from so many different causes requires serious investigation and the application of the whole Davy Crockett text: "Be sure you are right, and then go ahead."

CORRELATION OF MEDICAL TEACHING*

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MINNEAPOLIS

At the present day the knowledge required of the practitioner of medicine involves so many phases of scientific advancement and human activity that to give the student a proper working equipment of principles sufficiently reinforced by practical illustrations, taxes to the utmost the resources of the school and the ingenuity and power of the teacher. The old-time physician was, in his day, the ideal preceptor or teacher of medicine. As the naturalist has been replaced by a group of specialized workers in the biologic sciences, so the family doctor has been succeeded by a variety of specialists. Their knowledge

in their specific lines is exhaustive, but each seems likely to have his general view somewhat curtailed and his perception of the importance and exact position of his brother specialist's field partially obscured.

The present highly artificial mode of life renders it necessary for the physician to keep pace with development in commercial and economic activities, if for no other reason than that he may recognize and treat the diseases which result from specialized occupation, and may foresee and prevent opportunities for the transmission of disease, which the complexities of modern rapid transit and the massing together of large bodies of people afford.

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The universal use of the microscope, with bacteriologic and cultural methods, the very great advance in chemistry and physics in their application to the diagnosis, prophylaxis, and treatment of disease, the study of animal parasites as infective agents, and the interesting researches into the specific reactions of body fluids and tissue extracts leading to greater accuracy in the diagnosis and treatment of disease and the solution of certain medicolegal problems, render it necessary to train the student of to-day in a great many different lines. This cannot be done by a single teacher, but requires a large staff, and involves some dangers, especially diffuseness. The old-time physician, acting as preceptor, if acute in observation and systematic in habits of study and record, was better able to correlate methods and results of observation and treatment for his pupil.

The medical school was founded with the hospital as the center from which instruction radiated, and very rightly the patient continued to be the special object of study. As students increased in number, it became necessary to establish different chairs of instruction, and faculties were subdivided into the primary and clinical branches. The lecture method of imparting information prevailed and we all remember with pride and affection certain of our teachers whose eloquence has left its permanent impress upon us even if the truths, at that time so clear, have faded from memory. We all likewise recall that each branch of instruction constituted a study entirely by itself, and relationships of studies were absolutely undefined unless the instructor went outside the bounds of his own subject to point out relationships and the application of the truths he taught. While such duplication is bad, the failure to define boundaries was even worse, since it often left deserts in our education which years of the study and practice of medicine fail to render fertile.

In order to keep pace with the advance of modern science and to help students to retain knowledge of specialized methods and their application by affording opportunity to put them into actual practice, the practical laboratory method of instruction has been adopted for the primary branches. The cost of the laboratories has become so great that it seems likely that the commercial medical school, dependent upon student fees, must give place to the university with private endowment or state support, because, in addition to the expense of building and equipment, laboratories require large corps of thoroughly trained men whose time shall be given altogether to the work of teaching and research. These men can be paid in part by opportunity for research, but must also receive sufficient income

to live like their clinical brethren and maintain their professional status. There is a tendency to develop special laboratories purely for research, but to divorce teaching from research will prove disastrous, since an atmosphere of research is absolutely essential for satisfactory teaching.

Close relationship to hospitals enables the laboratory man to take his proper place with the clinician in the study of disease, but it seems probable that the present tendency for the laboratory man to confine himself to teaching and research will increase. If such specialization is desirable, it can be obtained only by providing proper compensation for the laboratory man, otherwise he will be forced ultimately into practice.

In the endeavor to systematize for the student the knowledge which the laboratory study and methods afford, and to preserve certain times of the year to the instructors for research, the so-called "concentration" method of study has been adopted in some of the universities, with the case method of instruction in the clinical branches. Harvard has been the chief exponent of this system, and Minnesota has followed. After an experience of several years it seems well to consider the possibility of improvement upon the method.

In the "concentration" method used in Minnesota the year is divided into two semesters and each semester into two equal parts. During the first year the whole of the first semester is equally divided between anatomy on the one hand and histology and embryology on the other, and the second semester is divided between physiology and chemistry. In the second year the first semester is divided between therapeutics, physiology, and chemistry, and the first half of the second semester is given to anatomy and histology and embryology, the second half of the semester being devoted to general bacteriology and pathology. The method of operation may be illustrated by stating that the student in the first semester of his freshman year spends a half of each day in the anatomic laboratory and the other half in the laboratory of histology and embryology. The same arrangement obtains in the second semester for chemistry and physiology. Formal lectures are largely replaced by laboratory talks based upon the student's practical work and given as the need arises. When a thorough knowledge of anatomy, histology, embryology, physiology, and chemistry has been acquired the students devote every day for the last two months of the second year to study in one laboratory, where they are taught the subjects of general pathology and bacteriology. Instruction in bacteriology deals with the preparation of mediums, the biology and physiology of bacteria, and the various technical methods which are em-

ployed in the identification of the bacteria and their isolation in pure culture, bacteriologic examination of water, the action of physical and chemic agents upon bacteria, and, in general, those phases of bacteriology which must be known before specific study of disease can be undertaken.

When familiar with the general principles of bacteriology, general pathology is begun. This includes instruction on inflammation, degenerations, immunity, fever, antitoxin, and serum work, and the general principles of tumors, etc. The two subjects are thus interwoven and the underlying principles of hygiene inculcated. In the first half of the third year, the entire time of four afternoons per week is devoted to what is known as special pathology and bacteriology. The pathology of the various diseases is taught and studied in special relationship to etiology. For instance, in tuberculosis, bacteriology is first taken up, and several varieties of tubercle bacilli studied and grown on the various mediums. Technical methods already learned are used by the students for the demonstration of the tubercle bacillus in tissues, fluids or other materials where it is commonly found. The whole life history of the organism is followed out, and its resistance to harmful agents is studied so that the principles and methods of protecting the public against this disease may be well understood. Animal inoculation is practiced in order to study the pathology of tuberculosis. Thus the general and special effects due to difference in the portals of infection, the size of the dose, the virulence of the organism, and the resistance of the host are all considered. The students learn not only the history of the typical tubercle and the details of its constituent elements, but other factors in regard to paths and methods of extension of the process with caseation, calcification, etc. Each tissue of the body is studied in gross and microscopic specimens from man and animals, and all available autopsy material is utilized. The other infective granulomas are studied in the same way at this time. Similar methods are used in the teaching and study of typhoid fever, the septic processes including pneumonia and anthrax, and throughout the work the pathology and hygiene of the various diseases are studied in relation to their bacterial cause, or hematology and biologic, in the case of animal parasites.

This leaves, of course, quite a number of diseases and pathologic processes still to deal with. The method of correlating bacteriology and pathology in this way has yielded such satisfactory results that it seems wise to extend it in order that the chairs of medicine and surgery may arrange their work, so as to take up the various diseases just when the students are study-

ing or have finished their laboratory work in bacteriology, pathology, hematology, and parasitology. In fact, if such correlation could be extended throughout the medical course, so as to include all years, it would be most advantageous. In any event, approximation to this ideal is to be desired and sought.

When students come to a medical college fully equipped in the humanities, including modern languages, and with mathematic, physics, chemist, and biologic training sufficient for their needs, some such course as the following might be pursued:

1. The time could be divided for the first few weeks among the laboratory subjects in order that the necessary general principles and technical methods might be instilled. For the sake of both teachers and students, these might be grouped in pairs so that the mornings could be given to one subject and the afternoons to another.

2. When such general knowledge and technic have been acquired in the branches of anatomy, histology, embryology, physiology, physiologic chemistry, etc., instruction should be given in the various branches along the lines of organology and special tissue study. For instance, when the anatomist has inculcated the musculature of the body with information in regard to the site, origin, insertion, and relation of the various muscles, the histologist could take up the minute structure and the physiologist teach function with the necessary theory and experimental work within his province. The same method could be followed for the vascular and nervous systems, and such related instruction is certainly to be desired particularly in dealing with the various organs of the body. The student should receive all his information and see each organ from the various points of view before having his attention distracted by other lines of instruction. At best he is apt to be somewhat mixed in his ideas, and his sum total of information is not so readily available when the minute anatomy of an organ is taught him a long time after he has gone over his gross anatomy or geography. Function, too, cannot be understood without a knowledge of gross and microscopic structure, and all three should therefore be taken up at approximately the same time. This principle of instruction along the lines of organology seems to be the most important in the first two years of medical training.

3. When such accurate and correlated knowledge of the normal has been acquired, the general principles and necessary technic of general pathology and bacteriology should be given, and might very well alternate with similar instruction along the lines of physical diagnosis and pharmacology in the latter portion of the second year.

4. In the last two years of a four-year course, when fully equipped with general principles and technical methods, both third and fourth year students might well take up the work together, since the full two years would probably be necessary in order to cover all of the more common diseases. A single group of diseases or infection should be taken up at a time from the standpoint of etiology. When of bacterial origin, the bacteriology of the disease should be thoroughly inculcated, and the practical experimental work of the student supplemented by demonstrations. When infection depends upon hematozoa or other animal parasites, the same method can be employed. The pathology of these diseases and a thorough study of all of the tissues and organs of the body should be made at this time, so that the relationship of the local lesions, both gross and microscopic, to the general infection or disease process may be defined and understood.

Now is the time also to take up the special methods of protecting others from infection, when the nature and resistance of the virus, portals and paths of infection, means of elimination, and such other basic details are under consideration. Hygiene thus taught is practical. The students are now prepared to receive instruction from the professor of medicine and his associates, and to study cases of tuberculosis in the hospital and dispensary. The professor of surgery, the orthopedist, and the gynecologist should take up the diagnosis and treatment of tuberculosis as it falls within their province. By such united effort, the student would have a comprehensive knowledge of tuberculosis, which it is impossible to acquire by the present disconnected methods in the same length of time. Nor should his knowledge of detail be less exhaustive because his grasp of the general problem is firm. In this way, if the more common diseases are studied and the student receives full information as to cause, general and local processes, prevention, diagnosis, and treatment of a single disease at one time, it will be possible for him properly to appreciate relative values. The experience of all of us has been similar. We have received instruction on human anatomy. We may or may not have learned the use of the microscope and the minute structure of cells, tissues, and organs. We may have had some lectures in physiology, and we may or may not have had experimental work, including physiologic chemistry and pharmacology. In any event, our information concerning the various organs or tissues has been received at irregular intervals from various instructors, and the amount of information retained and the vividness of our impressions have depended largely on the character, individuality, and force of the instructor. Re-

lationship of structure, development, and function, have never been made clear.

This is equally true in the later years of our student days, when the cause of disease and the local and general changes in anatomy and function have never been properly adjusted in our minds to the physical signs, symptoms, and treatment. It was quite common, and is still common, to teach the pathology of the individual anatomic systems, with the result that tuberculosis, syphilis, typhoid fever, or some other general disease which produces far-reaching results in many organs, may be considered a number of times without affording a proper conception to the student of the whole process. For instance, the pathologist may teach tuberculosis of the lungs and a few weeks later tuberculosis of the spleen, liver, intestine, or brain. At some other time, the professor of medicine, in taking up diseases of the chest, deals with tuberculosis, and the professor of surgery may not give instruction even in the same year on surgical tuberculosis. Here, too, the impression which remains with the student must again vary with the individuality and force of the teacher and with the opportunities at hand for illustration. Without correlation and the general summing up of these processes, it is very possible for one branch of medical teaching to become exploited and advanced at the expense of another equally important branch. Under present arrangements, medical teaching is likely to continue to be most irregular, and the student will be unable at any time—unless he has developed system more than most medical students are accustomed to do—to summarize his knowledge concerning any particular disease or disease process in relation to diagnosis, prevention, and treatment of that particular condition.

The "case method" of instruction is most important and should be included in such a general scheme as has been outlined, so that in the final two years the patient is the center of teaching and study. No individual case, however, is able to afford complete instruction on all the phases of medicine, and it will become necessary, therefore, to systematize certain wards or parts of the hospitals for this plan of teaching and research.

The main difficulties which such a plan suggests are the facts that one particular department may have a tremendous amount of work thrust upon it for a given period of time and for some time thereafter have little to do, while other phases of the particular subject are being presented by other teachers. Such time can be utilized in preparation for the next installment of work. Difficulties, too, in securing clinical material for illustration and study may be en-

countered, but these can be met by proper systematization. In Cambridge, Eng., there is a plan under consideration of which, as yet, no details have been published. This has for its object the forwarding of specially selected cases to Cambridge by skilled observers throughout the whole of Britain who are in sympathy with the project and are members of this Medical Research Society. A complete bibliography is compiled, including all phases of the particular disease which it is desired to study at that time. This bibliography is at the disposal of each member of the society, and through a central office each one of the members throughout the country is to be kept in constant touch with the work and is to furnish suitable cases to this central hospital as opportunity arises. The hospital is in direct relationship with the Cambridge laboratories, where concurrent chemic, bacteriologic, and pathologic studies of blood and various secretions, excretions, tissues, cells, and body fluids may be carried on.

A somewhat similar plan of coöperation with the alumni of any university would permit of the study of cases in series and could be utilized for undergraduate teaching. The study of typhoid fever or pneumonia offers no difficulties, since instruction in these diseases could be arranged for at the time of year when they may naturally be expected. This is true also of scarlet fever and diphtheria. The pus infections and tuberculosis may be studied at any time, since it is always possible to secure material, and the rarer infectious diseases could be studied by keeping in touch with enthusiastic alumni or studious medical men in the neighborhood of the medical school. Even small hospitals could be made to serve the purpose if due selection of cases were exercised and the central office were sufficiently well organized to keep in constant touch with energetic practitioners who might reasonably expect to be furnished with a complete record of the clinical histories, laboratory findings, course of treatment, and results obtained. While it must be admitted that it would be impossible to study all of the diseases in relationship to their etiology, it should be done so far as possible, and the fullest correlation between the various instructors should be maintained, so that full and complete information concerning the selected disease or process may be received from all of the sources at approximately the same time, in order that the total accumulated information may be filed at once, both in the mental compartment and written record.

It is probable that the teaching of to-day is too diversified and that attempt is made to cover too much ground. At best, the student can only be taught certain general principles and how to ob-

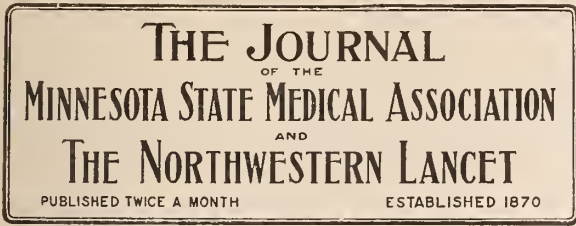
serve. It is, therefore, best to illustrate the methods of observation by the thorough study of a few disease processes rather than to attempt to cover the whole field of medicine. If he be properly taught how to approach his cases in a systematic way and to utilize every method of observation, the student's only difficulty will be to weigh the evidence which his eyes, ears, hands, microscope, or chemic tests afford him. If he is able to diagnose accurately the commoner disease processes and the changes which have been produced in the various tissues and organs of the body, if he knows the general principles of therapy, and is taught to advise his patient and to protect others with whom he may be brought in contact, he can easily adapt the same methods to the study of other processes and other diseases when the necessity for it arises. Such a general plan of teaching will eliminate the dangers of too great specialization, whether along laboratory or clinical lines, and will promote the use of logical methods of deduction and neutralize the present tendency to "cocksureness," with the possible oversight of important associated or causative conditions.

Where so much is at stake, no effort should be spared, and we should not close our eyes to the present difficulties and dangers. At best, the machine must be complicated, but it may be made to work with smoothness and regularity if molded upon the lines of modern business enterprise. In any event, the public has a right to expect that medicine, the most important of all the professions, be taught as carefully and systematically as engineering or other technical work.

DISCUSSION

DR. S. M. WHITE (Minneapolis): I think Dr. Westbrook has brought out an important point in connection with medical teaching, and that is the point in regard to keeping in mind the relation between clinical and laboratory teaching. In the present method we fail to live up to the teachings of that point. The laboratory is only the means of obtaining additional data regarding our cases, and the student should be taught so to look upon it. The student should be taught to look upon it as a court of last resort—something to complete the history of the case. In the bringing together of the facts about the case the laboratory is in a position to aid the student in the study of the case in connection with the clinical methods he may employ. He is able to use the laboratory later in connection with his clinical studies, but the laboratory and the bedside are too far apart, and I believe the doctor's suggestions along that line ought to be heeded.

"It is not vital what subjects are studied in school, it is not vital what percentage is given in the subjects, nor is it vital what particular line the student enters, provided it is one to his liking. The vital thing is that, in whatever subject or whatever line he works, he do his best and do right."



PUBLICATION COMMITTEE OF THE COUNCIL

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JUNE 15, 1906

THE STATE MEDICAL ASSOCIATION MEETING

The meeting of the Minnesota State Medical Association, June 20th and 21st, at Minneapolis, is going to be the best attended meeting we have ever had. The doctors are going to bring their wives, and a committee of ladies has laid interesting plans for their entertainment. The women are invited to meet this committee in the Directors' Room at the Public Library, Tenth Street and Hennepin Avenue, at 10 a. m. June 20th, where all plans will be explained.

Mr. and Mrs. Walker will open their art gallery, which contains some of the finest pictures in the country. Dr. and Mrs. Kimball are to open their beautiful home and grounds for a reception from four to six on the afternoon of the 20th, and it is expected that the medical session will be over by 5 p. m., so that most of the doctors will be able to go to this open-air reception and enjoy the latter part of it with the ladies. In the evening a large reception is to be given at the Masonic Temple where the medical meet-

ings are to be held. This reception is tendered by the Minneapolis ladies and is to be a general reception, not only for the doctors and their wives, but for their friends as well.

A luncheon is to be given for the ladies at 2 p. m., June 21st, at Donaldson's Tea-Rooms at fifty cents per plate. In the afternoon and evening the ladies and any other friends of the doctors are invited to accompany the Medical Association on its trip to Minnetonka. These extra tickets will be given for one dollar and fifty cents. The members of the Association will be given their tickets free by the Hennepin County Medical Society whose guests they are. This excursion includes a round-trip to Minnetonka, starting at 4:30 p. m., a trip around the lake on a steamer, and the banquet at the Tonka Bay Hotel.

NOTICE TO DELEGATES AND ALTERNATES

The House of Delegates will meet at 2 p. m. on Tuesday, June 19th.

All delegates and alternates must present properly signed credentials from the secretary of the county society before they can take part in the deliberations of the House of Delegates. Without credentials, the county society represented by a delegate, cannot in any way take part in the work of the House. No temporary delegate or alternate can be elected except by a special meeting of the society.

THE AMERICAN MEDICAL ASSOCIATION MEETING IN BOSTON

The most successful meeting ever held from point of numbers and entertainment, is the general verdict expressed on all sides. Nearly 5,000 physicians registered, the largest registration in the history of the Association. Adding to this large number the wives and visitors of the Association members, it is estimated that between 10,000 and 15,000 people have visited Boston during the session. Hotels were crowded, and the main body of visitors are quartered in boarding houses.

The House of Delegates, which numbers 150, is made up of 136 members who are qualified by their credentials, an unusually large attendance. The usual differences of opinion have arisen, op-

position to the election of officers has been promised, but, as usual, when men get together and calmly or even passionately talk over their grievances, the end is peaceful.

The presiding officer, Dr. W. J. Mayo, urged the members of the House of Delegates to air their views, present their personal complaints, and otherwise clear their perturbed mental atmosphere. The result was satisfactory: men repressed their supposed hard feelings, forgot their imaginary insults, and smiled at their former supposed enemies.

The opposition to the A. M. A. Journal management did not materialize, or, if it did come up, was adjusted without destructive injuries. It has been found that the management of a medical journal is neither child-like nor popular, and the outsider is the one who is in the most comfortable position. There are always people who feel they could edit or manage a newspaper or medical journal much better than anyone else, but experience teaches that the trained man, the man who does not fear to express his opinions, and who controls his plant in a reasonable and rational manner, is better adapted for the work than the inexperienced harping critic.

The installation of President-Elect, Wm. J. Mayo, was impressive, and created the wildest enthusiasm among the 5,000 people who filled Mechanics Hall.

The entire audience stood up, waving papers and shouted their greetings. It must be a psychological moment in any man's career to receive the honors and homage of the representative medical men of the United States, particularly if he deserves it as did Dr. Mayo. Yet in the face of this enthusiasm and in the presence of the governor of the state of Massachusetts, President Elliot of Harvard, Mayor Fitzgerald of Boston, and many prominent foreign physicians, Dr. Mayo maintained his calm, dignified, and unassuming manner that is so characteristic of him.

The reception to the President was a brilliant affair. The costumes of the ladies, the enormous throng of dancers, and the music of a military band made a spectacle long to be remembered.

I propose to take up some of the work of the sections later.

GOVERNMENTAL HEALTH CRUSADE

The United States government, headed by President Roosevelt, is taking an active interest in public health measures. The crusade against impure meats and the suppression of tuberculosis may ultimately lead to the establishment of a department or a special representation in the cabinet of the president.

Sanitary regulations are recognized and accepted by state and local boards of health as essentials for the maintenance of health and the possible elimination of disease. If the board of health efforts are backed by the government it may be possible to forcibly educate the public to a realizing sense of the importance of rules which, if carried out, will offer the greatest possible protection to all classes against the invasion of epidemics.

The Beveridge meat-inspection amendment to the agricultural appropriation bill is of widespread importance, and, although it will cause a great deal of confusion and criticism in its adoption, in the end it will be of incalculable benefit to the country. The Minnesota State Board of Health has already adopted rules which embody the ideas of the Beveridge bill, with particular reference to slaughter houses, their cleanliness, and the disposal of diseased and waste products. It is almost impossible to prevent butchers and packers from allowing unwholesome meats to reach the consumer. The public accept too much in good faith. They should see and investigate for themselves, and in so doing would be more careful in their purchases and would prepare their meats more suitably for consumption. The digestive tract will stand a good deal of insult, but there are foods which are not fit for any living creature to take into his system, and they would not be eaten if their contents and manner of preparation were known.

The employees of meat houses are not always trained in the ethics of their calling, and a rigid set of rules for their guidance would show the errors of their former methods.

The cases of ptomaine poisoning that are undiagnosed are many, and the toxic results of bad meats are too often unrecognized. The butchers and packers will fight or propitiate, but the consumer must demand cleanliness.

The suggestions for the avoidance of tuberculosis are scoffed at by the untaught, but time and an energetic campaign of education will overcome all objections.

School boards will gradually appreciate the necessity of separating the sick from the well, and the people will more reluctantly come into line.

All this will take time and patience, and all the time the physician must stand by his professional training and teach his patients the necessity of obeying the laws for the benefit of the public health. Obstructionists will always be in evidence, and will only bow to the application of powerful laws applied by fearless officials.

APPENDICITIS IN FRANCE

Dr. Chauvel, the medical inspector of the French army, has been making a statistical study of appendicitis, with particular reference to medical versus surgical treatment.

The surgeon holds to the theory that there is no medical treatment for appendicitis, while the medical man timidly suggests that it is possible for an appendicitis to recover without the use of the knife. This controversy has been the subject of much discussion in all medical society meetings, and at the adjournment each side holds rigidly to its own views.

In 1902 there were 668 patients suffering from appendicitis received in the military hospitals of France. Out of this number 188 were treated surgically, with 23 deaths; 480 were treated medically, with but 3 deaths. To carry the investigation still further, Dr. Chauvel found that in the French army in Algeria, which included Europeans, French, and natives, in five years, out of 14,000 men there were among the Europeans and French 137 cases of appendicitis, while in this same space of time out of 17,000 natives, there were but 13 cases.

These statistics show that the disease is two times more frequent among the French in France than among the French in Algeria, and is ten times less frequent among the natives. The only explanation offered is the character of the foods in the different countries, and the different modes of living of the foreigners and natives.

Perhaps this is the reason why appendicitis occurs more frequently in this country. Unfortunately, no reliable statistics can be secured to show how differently food stuffs affect the intestinal tube, yet it is an admitted fact that among high-livers there is always more intestinal disturbances.

The nations in far-away countries are brought up on an extremely simple dietary. The nations in our own country are supposed to live upon plain, wholesome foods, but where the quantity and quality of foods is compared between the farming classes of the United States and the native classes of foreign countries, the latter are presumably freer from appendiceal dangers than the former. A diet that is restricted and simple, a life untroubled by the tumults of civilization, an existence that approaches the animal type, will assuredly lessen intestinal toxic states.

All of these factors must be considered as causes, as well as determining propositions, in the surgical or medical treatment of appendicitis. The French investigator claims that medical treatment cures 99 out of every 100 cases. In America no such claim could be advanced from either point of view. Comparisons between those who live in cities and those who live in isolated parts of the country might throw light upon the causes of appendicitis. Today the surgeon is in the ascendant; tomorrow, if a new regime in dietetics was in order, the internalist would be in the limelight as the saviour of the intestinal tail.

THE ROSTER

The Secretary, Dr. McDavitt, will thank every member of the Association to point out any errors that may occur in the Roster. It is very difficult to get a list of names and addresses absolutely correct when they come from many sources.

REPORTS OF SOCIETIES

HENNEPIN COUNTY SOCIETY

A regular meeting of the Hennepin County Medical Society was held on June 4th, Dr. J. A. Crosby, the vice-president, in the chair, and 30 members present.

The Executive Committee advised the continu-

ance of the mid-monthly meetings for the year 1906-7.

This was adopted by the Society by motion, as follows: Moved, that the mid-monthly meetings be continued for one year (1906-7), said meetings to be held on the third Monday evening of each month, except during holidays and the summer vacation. Carried unanimously.

Dr. A. L. Mann reported for the committee appointed to arrange for the entertainment of the Minnesota State Medical Association, and outlined a series of diversions.

The following named physicians were elected to membership, having been reported favorably by the Censors:

Dr. O. H. Bakke, 1525 E. Franklin Ave., Hamline Med. School, 1896, by transfer.

Dr. H. M. Guilford, 804 Pillsbury Bldg., University of Minn., 1898, by initiation.

Dr. Ada E. Talbot, 210 Pillsbury Bldg., Hamline Med. School, 1905, by initiation.

Dr. Emily W. Fifield, Pillsbury Bldg., Women's Med. Co., Baltimore, 1884, by initiation.

Letters were read from Congressman Hon. Loren Fletcher and others in regard to the bill to reorganize the Army Medical Department.

Dr. E. S. Strout read a paper with the title, "Convergent Squint, with Special Reference to Early Treatment." The paper was discussed by Dr. O. S. Chapman and others.

Dr. F. A. Knights gave a paper with the title, "Some Thoughts on Things Connected with Infant Feeding," and Dr. J. P. Sedgwick a paper on the "Calorimetric Principle of Infant Feeding." Dr. D. O. Thomas and others entered into the discussion.

C. H. BRADLEY, M. D., Secretary.

NEWS ITEMS

Dr. Robert Turnbull has located at Karlstad.

Dr. J. A. McKay, of Langdon, N. D., has moved to Clyde, N. D.

Dr. George A. Steele, of Havanna, N. D., has moved to White Rock, S. D.

Dr. Jules Gendron, of Grand Rapids, was taken to St. Paul last month for hospital treatment.

Dr. J. C. Dunn, a recent graduate of a Chicago medical school, has located in Newberg, N. D.

The closing of the hospital at Hankinson, N. D., is greatly regretted by the citizens of that place.

Dr. L. E. Claydon, of Red Wing, has gone to Europe for a couple of months for special study in the hospitals.

Dr. Frank T. Brigham, of Two Harbors, and Miss Katherine Thompson, of Duluth, were married last month.

Dr. A. J. Matthews, of Ortonville, has received an appointment on the staff of St. Mary's Hospital, Rochester.

The contract for the new hospital at Brookings, S. D., has been let, and the work will be pushed as fast as possible.

Dr. Wm. Jacoby, of Mt. Vernon, underwent an operation for bladder trouble in St. Joseph's Hospital, Mankato, last month.

Prof. F. F. Wesbrook has been made dean of the faculty of the Department of Medicine and Surgery in the State University.

Dr. J. P. Resner, of Scotland, S. D., has gone to Germany for six months to do post-graduate work in medicine and surgery.

The Northern Pacific Railway has completed plans for a fine sanitarium at Gardner, Montana, at the entrance of the Yellowstone Park.

Dr. J. C. Rothenberg, of Springfield, has returned from New York and Philadelphia, where he spent several weeks in post-graduate work.

The Blue Earth County Medical Society will probably hold a series of open meetings to discuss subjects of special interest to the public.

Dr. W. H. Valentine, of Tracy, started June 9th for Boston, Mass., where he will take a post-graduate course at Harvard under Dr. Cabbot.

Dr. Thos. Trutna, who has been connected with the Asbury Hospital, Minneapolis, for the past year, has succeeded Dr. T. W. Hovorka, at Silver Lake.

Dr. N. J. Shields, after a two-years' absence from Lidgerwood, N. D., has returned to that place and again take up practice. He will make a specialty of eye, ear, nose and throat work.

A Rochester paper gives a four-column report of the last meeting of the Olmsted County Medical Society, at which the subject of meat-killing and inspection was considered.

The Minnesota Valley Medical Association held its twenty-seventh semi-annual meeting at Mankato on May 8th. The attendance was large, the papers excellent and the enthusiasm characteristic of the meeting of this society was maintained. Several new members were received.

The Olmsted County Medical Society held an open meeting in May, at Rochester. Subjects of special interest to the public were presented and discussed, such as tuberculosis, inspection of meats, and the killing of animals and preservation of meats. No meeting will be held this month because of the meetings of the state and National associations.

The Nurses' Associated Alumnae of the United States met in Detroit on June 6-7. The delegates from Minneapolis were Miss Edith P. Rommel, Miss Elizabeth Stevens, Mrs. Charlotte A. Roberts, Miss C. M. Rankeillour, Miss Marion Young, and Miss Lena Christianson; and from St. Paul, Mrs. Alex R. Colvin, Miss M. Nord, and Miss Holmes. The party went by way of the lakes.

The doctors of Webster City, Iowa, have won their telephone fight, and they deserve great credit for the stand they took for the sake of a principle. Their rates were increased because their telephones were used so often. The doctors felt that the other end of the line caused the increased number of calls, and should bear the burden. Moreover, many people have telephones, simply because they can use them for calling doctors, and to assess the doctor for this use is a little too unfair.

The North Dakota State Medical Association met at Fargo on May 16-17. Some very important business was transacted. The insurance rate-fee was fixed at \$5 as a maximum. Voluntary subscriptions will be received by Secretary Rowe for the N. S. Davis monument fund. The address of Prof. Ladd, of the State Experimental Station, on pure foods received marked attention and the association will do all in its power to obtain national legislation along this line. The meeting next year will be at Minot. The following were elected officers: President, Dr. R. D. Campbell, Grand Forks; first vice-president, Dr. Charles McLachlan,

New Rockford; second vice president, Dr. J. E. Countryman, Grafton; third vice president, Dr. H. K. Phillips, Hope; secretary, Dr. H. K. Rowe, Casselton; treasurer, Dr. J. D. Taylor, Grand Forks.

At the April examinations the following physicians received certificates to practice in North Dakota:

Dr. M. H. Sawyer, Washburn; Dr. A. J. Ames, Forbes; Dr. W. D. Lyle, Howard; Dr. R. H. Ray, Garrison; Dr. L. G. Smith, Mannhaven; Dr. E. W. Gog, Breckenridge, Minn.; Dr. C. A. McKay, Emerado; Dr. G. E. Peterson, Streeter; Dr. A. Gallant, Oakwood; Dr. N. Balfour, Sarles; Dr. F. Peake, Valley City; Dr. F. G. Hubbard, Cayuga; Dr. E. A. LaBien, McHenry; Dr. L. Meyers, Westhope.

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A good general practice of over \$3,500 annually in town of about 400 in Southwestern Minnesota; first-class farming country; nearest competition 14 miles. Practice goes to purchaser of office and business lots and office furniture with some appliances; all for \$1,500; \$1,000 cash, balance on time if desired. Selling because of health of family.—Address C., care of this paper.

PRACTICE FOR SALE.

Intending to study a specialty in Europe before re-locating in a larger city, I offer for sale my office equipment, instruments, drug stock, etc. (everything up-to-date necessary in the practice), in Southern Minnesota, city of 2,500 (rich farming country surrounding). Cash practice averages \$3,500 a year, and goes to purchaser of my outfit at inventory price, \$1,200, for quick cash sale. If you want to step into a good practice address "S.," care of this Journal.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during the fine season in the delightful city, write for particulars, to New Orleans Polyclinic, P. O. Box 797.

DISTRICT AND COUNTY ROSTER

FIRST DISTRICT

COUNCILOR, E. A. HENSEL..... Alexandria

Clay-Becker County Medical Society

Regular meetings, last Monday in March, June, September, and December
Annual meeting in September

PRESIDENT		Carman, J. B.....Detroit	Humphrey, E. W.....Moorhead
Awty, W. J. ....Moorhead		Darrow, Daniel C.....Moorhead	Jones, S. S.....Frazee
SECRETARY		Dawson, C. A.....Glyndon	Kaess, Andrew J.....Moorhead
Hyde, Leon W. ....Moorhead		Erge, T. S.....Moorhead	Smith, M. B. ....Lake Park
Aborn, Wm. H.....Hawley		Fraser, G. W. ....Detroit	Smith, S. D. ....White Earth
Alexander, F. H.....Barnesville		Germain, R. T.....Barnesville	Weeks, L. C.....Detroit
Barton, E. R.....Frazee		Heimark, O. E.....Hawley	
		Hoit, Edward E.....Detroit	

Park Region District and County Medical Society

Wilkins, Otter Tail, Douglas, and Grant Counties

Regular meetings, second Wednesday in January, April, July and October.
Annual meeting in October.

PRESIDENT		Cowing, Phil. G.....Ashby	Kolset, C. D. ....Wendell
Meckstroth, C. W.....Brandon		Davis, L. A.....Dalton	McLean, T. N.....Fergus Falls
SECRETARY		Duncan, W. T.....Fergus Falls	Mathisen, G. B.....Evansville
Haugan, O. M. ....Fergus Falls		Freeborn, J. A.....Fergus Falls	Muus, Peter H.....Kensington
Armstrong, L. W....Breckenridge		Gilkinson, A. J. ....Osakis	Quitmeyer, O. C....Parkers Prairie
Baker, A. C.....Fergus Falls		Griswold, F. E. ....Hoffman	Randall, J. M. ....Underwood
Berthold, J. L.....Perham		Gulseth, Gustave.....Henning	Regner, J. A.....Evansville
Boyd, H. J.....Alexandria		Haskell, A. W.....Carlos	Satterlee, L. W. ....Alexandria
Brabec, F. J.....Perham		Heimark, C. B.....Battle Lake	Schoonmaker, E. C. ....Perham
Burnap, W. L. ....Pelican Rapids		Hensel, E. A.....Alexandria	Serkland, J. C. ....Rothsay
Busch, M. F.....Pelican Rapids		Lee, K. J.....Alexandria	Sherping, O. Th.....Fergus Falls
Cleveland, H. E. ....Osakis		Lying, John A.....Minneapolis	Truax, W. E.....Breckenridge
Cooper, J. D. ....Dent		Kittleson, Thos. N....Fergus Falls	Vigen, J. G.....Fergus Falls
		Kling, F. L. ....Pelican Rapids	Vinje, Syver .....Henning

Red River Valley Medical Society

Polk, Marshall, Kittson, Roseau, and Norman Counties

Regular meetings, fourth Tuesday in each month
Annual meeting in October

PRESIDENT		Gilmore, R. ....Bemidji	Norin, F. L. ....Roseau
McKinnon, M. ....Fosston		Golberg, M. L.....Twin Valley	Oftel, H. A. ....Oslo
SECRETARY		Gronvold, F. O.....Gary	Ohnstad, J.....McIntosh
Bratrud, Theodore .....Warren		Hanson, George C.....Climax	Olson, O. H.....Erskine
Anderson, W. S. ....Warren		Hanson, M.....Hendrum	Patterson, F. L. ....Lancaster
Baker, A. C.....Stephen		Hodgson, H. H.....Crookston	Risjord, J. N.....Fertile
Bertelson, O. L.....Crookston		Holte, H.....Crookston	Sfaleen, Arthur W.....Hallow
Boeckman, M.....Thief River Falls		Kjelland, J. S.....Crookston	Slipern, H. ....Fosston
Chapin, J. S.....Euclid		Lemieux, Israel...Red Lake Falls	Smith, H. W.....Crookston
Cummings, J. C.....St. Hilaire		Lockwood, M. M.....Hallow	Stuhr, H. C.....Argyle
Dampier, C. E.....Crookston		Lyman, F. V.....Beltrami	T Turnbull, R. ....Fosston
Danielson, K. A.....Twin Valley		Melby, O. F.....Warren	Vistaunet, P. L...Thief River Falls
Denniston, C. H.....Crookston		Mitchell, F.....Euclid	Wattam, G. S.....Warren
Dunlop, A. H.....Crookston		Morley, G. A.....Crookston	Watson, N. M.....Red Lake Falls
Farley, F. X.....Crookston		Muir, J. B.....Roseau	Wilkinson, J. C. ...Red Lake Falls
Gambell, S. H...Thief River Falls		Nelson, A.....Fertile	
		Neraal, P. O.....McIntosh	

West Central Minnesota Medical Society

Pope, Stevens, Traverse, and Big Stone Counties

Regular meetings, second Wednesday in January, April and July,
Annual meeting in October

PRESIDENT		Eberlin, E. A.....Glenwood	Linde, Herman .....Cyrus
Randall, B. M. ....Graceville		Ewing, C. E. ....Wheaton	Magnuson, C. ....Clinton
SECRETARY		Fjelstad, C. A.....Glenwood	Nuckolls, G. W.....Tintah
Gibbon, L. L. ....Lowry		Fleming, A. S.....Wheaton	Oliver, C. J.....Graceville
Bolsta, Charles .....Ortonville		Heimark, J. H.....Cyrus	Ransom, M. L.....Hancock
Caine, C. E.....Morris		Hulburd, H. L.....Morris	Thomas, Benj. ....Chokio
Christenson, C. R. ....Starbuck		Karn, J.....Ortonville	Whier, J. D.....Bardsley
		Leuty, Amos .....Morris	Whittemore, J. G. ....Donnelly

SECOND DISTRICT

COUNCILOR, WALTER COURTNEY..... Brainerd

Aitkin County Medical Society.

PRESIDENT		SECRETARY	
Graves, Carlton .....Aitkin		Belsheim, A. G.....Aitkin	Avery, J. F.....Aitkin
			George, James W.....Aitkin
			Kelly, B. W. ....Hickory

Upper Mississippi Medical Society

Aitkin, Beltrami, Cass, Crow Wing, Hubbard, Morrison, Todd, and Wadena Counties

Regular meetings, second Tuesday in January, April, July and October. Annual meeting in January.

PRESIDENT

Thabes, J. A. Brainerd

SECRETARY

Coulter, Charles F. Wadena
 Allen, Frank H. Staples
 Batcheller, Oliver T. Brainerd
 Cameron, William G. Staples
 Camp, James L. Brainerd
 Chance, J. P. Royalton
 Christie, George R. Long Prairie
 Course, Chas. Verndale
 Courtney, Walter Brainerd

Desmond, M. A. Eagle Bend
 Fortier, Geo. M. A. Little Falls
 Groves, A. F. Brainerd
 Hemstead, Werner Brainerd
 Kenyon, Paul E. Wadena
 Holst, C. F. Little Falls
 Holst, J. B. Little Falls
 Knickerbocker, Frank H. Staples
 McCulloch, George. Motley
 McKinnon, J. J. Wadena
 Mallory, J. N. Emily
 Miller, W. A. New York Mills
 Millspaugh, J. G. Little Falls

Morrell, W. N. Verndale
 Morrison, William R. Bemidji
 Mowers, S. W. Brainerd
 Nicholson, Joseph Brainerd
 Parrott, B. W. Long Prairie
 Reeves, C. E. Clarissa
 Reid, William Deerwood
 Roberts, L. M. Little Falls
 Stone, W. T. Park Rapids
 Trace, O. C. Little Falls
 Van Valkenburg, B. F., Long Prairie
 Whyte, J. J. Bertha
 Wilcox, F. L. Walker

THIRD DISTRICT

COUNCILOR, W. S. FULLERTON. St. Paul

Ramsey County Medical Society

PRESIDENT

Foster, Burnside St. Paul

SECRETARY

Leavitt, F. E. St. Paul
 Abbott, E. J. St. Paul
 Allen, Mason. St. Paul
 Arcker, A. B. St. Paul
 Appleby, E. V. St. Paul
 Armstrong, J. M. St. Paul
 Bacon, L. C. St. Paul
 Balcome, F. E. St. Paul
 Barsness, Nellie. St. Paul
 Beckley, F. L. St. Paul
 Benepe, L. M. St. Paul
 Bennion, P. H. St. Paul
 Bettingen, J. W. St. Paul
 Boeckmann, E. St. Paul
 Boeckmann, Egill St. Paul
 Brooks, D. F. St. Paul
 Boxell, C. E. St. Paul
 Brown, E. L. St. Paul
 Brown, Leroy St. Paul
 Burch, F. St. Paul
 Cameron, J. A. St. Paul
 Campbell, J. E. St. Paul
 Cannon, Charles M. St. Paul
 Cannon, Harry St. Paul
 Casseday, F. F. Rosemount
 Cavanaugh, J. O. St. Paul
 Chamberlin, J. W. St. Paul
 Christison, J. T. St. Paul
 Colvin, A. R. St. Paul
 Conheim, Eva St. Paul
 Cook, Paul B. St. Paul
 Coon, Geo. M. St. Paul
 Cuff, Wm. S. St. Paul
 Darling, J. B. St. Paul
 Davis, H. W. St. Paul
 Davis, William. St. Paul
 Dennis, W. A. St. Paul
 Dinwoodie, Wm. St. Paul

Dodge, W. M. St. Paul
 Dohm, C. L. St. Paul
 Doran, G. W. St. Paul
 Dunning, A. W. St. Paul
 Earl, Robert O. St. Paul
 Ferguson, J. C. St. Paul
 Flagg, S. D. St. Paul
 Fullerton, W. S. St. Paul
 Gilfillan, J. S. St. Paul
 Gillette, A. J. St. Paul
 Goodrich, Judd St. Paul
 Gravelle, J. M. A. St. Paul
 Greene, C. L. St. Paul
 Hall, A. R. St. Paul
 Hall, Charlotte St. Paul
 Hawkins, V. J. St. Paul
 Heath, A. C. St. Paul
 Henderson, A. Scanlon
 Hoff, Peder A. St. Paul
 Johnson, Asa St. Paul
 Johnson, H. C. St. Paul
 Johnson, J. S. St. Paul
 Jones, D. C. St. Paul
 Jones, Talbot St. Paul
 Kane, J. P. St. Paul
 Kelley, W. D. St. Paul
 Kistler, A. S. St. Paul
 Lando, D. H. St. Paul
 Lankester, Howard St. Paul
 Lee, C. E. St. Paul
 Lerche, Wm. St. Paul
 Lewis, J. D. St. Paul
 Lewis, W. W. St. Paul
 Little, W. J. St. Paul
 McDavitt, Thos. St. Paul
 McLaren, Jennette M. St. Paul
 MacLaren, A. St. Paul
 Macdonald, Angus St. Paul
 Maloney, T. J. St. Paul
 Markoe, J. C. St. Paul
 Meade, C. J. St. Paul
 Miller, A. W. St. Paul

Miller, C. C. St. Paul
 Nelson, J. C. St. Paul
 Nelson, L. A. St. Paul
 Nippert, H. T. St. Paul
 Norton, H. G. St. Paul
 O'Brien, H. J. St. Paul
 O'Connor, J. V. St. Paul
 Peddicord, H. St. Paul
 Pine, A. A. St. Paul
 Pine, O. S. St. Paul
 Porter, O. M. St. Paul
 Putnam, Catherine E. St. Paul
 Quinn, J. A. St. Paul
 Ramsey, W. R. St. Paul
 Riggs, C. E. St. Paul
 Ritchie, H. P. St. Paul
 Ritchie, Parks St. Paul
 Rogers, F. D. St. Paul
 Rogers, J. T. St. Paul
 Rothrock, J. L. St. Paul
 Roy, Philemon St. Paul
 Schuldt, F. C. St. Paul
 Schwyzer, Arnold St. Paul
 Senkler, Geo. E. St. Paul
 Shimonek, Anton St. Paul
 Simon, B. E. St. Paul
 Smith, C. E. St. Paul
 Sneve, Haldor St. Paul
 Sohlberg O. St. Paul
 Stocker, S. M. Duluth
 Stumm, T. W. St. Paul
 Sweeney, Arthur St. Paul
 Sweeney C. F. St. Paul
 Taylor, H. L. St. Paul
 Tessler, M. St. Paul
 Walsh, E. F. St. Paul
 Warne, E. G. St. Paul
 Warner, E. F. St. Paul
 Wheaton, C. A. St. Paul
 Whitman, A. F. St. Paul
 Williams, C. St. Paul

Washington County Medical Society

Regular meetings second Tuesday every two months, odd numbered months.

Annual meeting in January.

PRESIDENT

Freligh, E. O'B. Stillwater

SECRETARY

Landeen, F. G. Stillwater
 Boleyn, E. S. Stillwater
 Burfiend, G. H. Afton

Chambers, W. C. Stillwater
 Clark, T. C. Stillwater
 Haines, J. H. Stillwater
 Kalinoff, D. Stillwater
 Merrill, B. J. Stillwater
 Noth, Henry W. Minneapolis
 Pratt, W. H. Stillwater

Ryan, E. P. Stillwater
 Steen, A. H. Cottage Grove
 Stevens, F. A. Lake Elmo
 Swartz, W. J. Forest Lake
 Thomas, O. F. Lakeland
 Wells, E. E. Stillwater

Chisago-Pine County Medical Society

Regular meetings, second Tuesday in January, April, July, and October Annual meeting in October

PRESIDENT

Anderson, C. A. Rush City

SECRETARY

Dredge, H. P. Sandstone
 Barnum, E. E. Pine City
 Cowan, D. W. Sandstone

Gunz, A. N. Centre City
 Hertzman, C. O. Lindstrom
 Lundgren, C. E. Harris
 Lyons, A. Pine City
 McEachern, W. A. Sandstone
 Murdock, H. G. Taylor's Falls
 Riley, E. A. Willow River

Steirle, A., Jr. Rush City
 Stenberg, Oscar. Harris
 Stephan, E. L. Hinkley
 Taustrom, Ingeborg. Center City
 Wiseman, R. L. Pine City
 Werner, O. S. Lindstrom
 Zeien, Thos. North Branch

Central Minnesota District Medical Society

Millie Lacs, Isanti, Sherburne, and Kanabee Counties

Regular meetings, March, June, September and December

PRESIDENT

Whiting, J. F. Spencer Brook

SECRETARY

Lewis, A. J. Mora
Bacon, H. P. Milaca

Caldwell, D. K. Milaca
Caley, G. R. Princeton
Cooney, H. C. Princeton
Olson, S. H. Milaca
Hixon, R. B. Cambridge
Sternier, O. W. Cambridge

Swenson, Charles Braham
Titus, W. S. Mora
Vrooman, F. E. St. Francis
Whittemore, N. K. Elk River
Woods, E. A. Clear Lake

St. Louis Lake, Carleton, and Itasca County Medical Society

Regular meetings second Thursday of each month.
Annual meeting in December.

PRESIDENT

Knauff, M. D. Two Harbors

SECRETARY

Taylor, C. W. Duluth
Abbott, C. U. Aurora
Adams, B. S. Hibbing
Ayers, G. T. Ely
Bagley, W. R. Duluth
Barrett, E. F. Eveleth
Blacklock, S. S. Hibbing
Boyer, S. H. Duluth
Braden, A. J. Duluth
Bray, C. W. Biwabik
Brooks, G. F. Stevenson
Brunelle, A. M. Cloquet
Budd, J. D. Two Harbors
Bullen, F. W. Eveleth
Butchart, S. M. Hibbing
Carson, J. H. Duluth
Cheney, E. L. Duluth
Collins, H. Duluth
Conkey, C. D. Duluth
Coventry, W. A. Duluth
Crowe, J. H. Virginia
Daugherty, E. B. Eveleth
Davis, H. S. Duluth
Deslauriers, A. A. Duluth
Detling, F. E. Duluth
Drenning, F. C. Duluth
Eklund, J. J. Duluth
Fahey, E. W. Duluth
Farmer, J. C. McKinley

Flemming, James Cloquet
Gans, E. M. Eveleth
Graham, D. Duluth
Graham, R. Duluth
Grawn, F. A. Duluth
Greeley, L. Q. Duluth
Harwood, W. E. Eveleth
Hirschfield, M. S. Duluth
Hovde, A. G. Biwabik
Hovde, H. Duluth
James, R. C. Hibbing
Jern, J. H. Duluth
Johnson, A. E. Cloquet
Johnson, I. W. Eveleth
Keyes, C. R. Duluth
Kinnear, T. J. Eveleth
Kraft, P. Duluth
Kuth, J. R. Duluth
Lenont, C. B. Virginia
Linneman, N. L. Duluth
Lum, C. E. Duluth
Lynam, F. Duluth
McAuliff, J. Duluth
McComb, C. F. Duluth
McCoy, Mary Duluth
McCuen, J. A. Duluth
Magie, W. H. Duluth
Maris, Emily Duluth
Moore, L. A. Tower
More, C. W. Eveleth
Murray, D. D. Duluth
Nyquist, J. E. Cloquet
Oredson, O. A. Duluth

Pare, L. T. Duluth
Parker, O. W. Ely
Patton, F. J. Duluth
Payette, C. H. Duluth
Ritchie, A. Duluth
Ritchie, A. F. Duluth
Roadman, J. M. Bovey
Rood, D. C. Hibbing
Salter, W. H. Duluth
Schliek, A. T. Duluth
Schulze, A. G. Carlton
Seashore, D. E. Duluth
Sedgwick, J. P. Minneapolis
Sewell, R. J. Nashwauk
Shaw, A. W. Buhl
Shipman, C. G. Ely
Stewart, C. A. Duluth
Stocker, S. M. Duluth
Storch, C. M. Grand Rapids
Stuech, E. D. Duluth
Sukeforth, L. A. Duluth
Taylor, A. C. Duluth
Tower, J. B. Topeka, Kas.
Tuohy, E. L. Duluth
Tilderquist, D. L. Duluth
Tufty, J. M. O. Duluth
Walker, A. E. Duluth
Walker, H. Duluth
Watkins, S. O. Carlton
Webster, H. E. Duluth
Weston, J. B. Duluth
Wilkinson, Stella Duluth

FOURTH DISTRICT

COUNCILOR, F. A. KNIGHTS. Minneapolis

Hennepin County Medical Society

Regular meetings, first Monday in each month, except July and August
Annual meeting in January

PRESIDENT

Todd, F. C. Minneapolis

SECRETARY

Bradley, C. H. Minneapolis
Abbott, A. W. Minneapolis
Adair, F. L. Minneapolis
Aldrich, A. G. Minneapolis
Alger, E. W. Minneapolis
Aling, C. P. Minneapolis
Alymer Minneapolis
Anderson, A. E. Minneapolis
Anderson, J. D. Minneapolis
Arey, H. C. Excelsior
Aurand, W. H. Minneapolis
Aurness, P. A. Minneapolis
Aylmer, A. L. Minneapolis
Baier, Florence C. Minneapolis
Bakke, O. H. Minneapolis
Barber, J. P. Minneapolis
Bartlett, C. K. Minneapolis
Bartlett, W. K. Minneapolis
Barton, G. C. Minneapolis
Bass, G. W. Minneapolis
Baxter, S. H. Minneapolis
Beachler, G. F. Minneapolis
Beard, R. O. Minneapolis
Beekman, E. H. Minneapolis
Behrens, B. M. Minneapolis
Bell, J. W. Minneapolis
Benjamin, A. E. Minneapolis
Bessenen, A. N. Minneapolis
Bewan, Charles J. Villard
Fishop, C. W. Minneapolis
Blake, James Hopkins
Bloom, W. D. Toronto, Canada
Bouman, H. A. Minneapolis
Braesch, W. F. Minneapolis
Braeken, H. M. St. Paul
Brown, E. J. Minneapolis
Brown, R. S. Minneapolis
Burnam, C. F. St. Paul
Byrnes, W. J. Minneapolis

Campbell, R. A. Minneapolis
Carlaw, C. M. Minneapolis
Cary, H. E. Minneapolis
Cates, A. B. Minneapolis
Chapman, O. S. Minneapolis
Chowning, W. M. Minneapolis
Cirkler, A. A. Minneapolis
Cockburn, J. C. Minneapolis
Cohen, H. A. Minneapolis
Condit, W. H. Minneapolis
Cooke, W. H. Minneapolis
Corbett, J. F. Minneapolis
Cosmann, E. O. Minneapolis
Cowles, D. C. Minneapolis
Crafts, Leo M. Minneapolis
Crosby, J. A. Minneapolis
Cross, Jno. G. Minneapolis
Crume, Geo. P. Minneapolis
Dart, L. O. Minneapolis
Day, L. W. Minneapolis
Dearborn, B. Minneapolis
Deziel, G. Minneapolis
Disen, C. F. Minneapolis
Donaldson, C. A. Minneapolis
Driesbach, N. Minneapolis
Dumas, C. H. Minneapolis
Dunsmoor, F. A. Minneapolis
Eitel, Geo. G. Minneapolis
Erb, Frederiek A. Minneapolis
Farr, R. E. Minneapolis
Fitzel, Emily W. Minneapolis
Fitzgerald, R. J. Minneapolis
Force, J. F. Pasadena, Cal.
Fryberger, W. C. Minneapolis
Geist, Emil S. Minneapolis
Gordon, G. J. Minneapolis
Gould, J. B. Minneapolis
Graham, B. F. Minneapolis
Green, E. K. Minneapolis
Guilford, H. M. Minneapolis
Hagaman, G. K. Minneapolis
Haggard, G. D. Minneapolis
Hall, W. A. Minneapolis

Hamilton, A. R. Minneapolis
Hare, E. R. Minneapolis
Harrah, J. W. Minneapolis
Harrington, C. D. Minneapolis
Hartzell, Thos. B. Minneapolis
Haverfield, Addie R. Minneapolis
Haynes, F. E. Minneapolis
Head, Geo. D. Minneapolis
Helk, H. H. Minneapolis
Henry, C. E. Minneapolis
Hill, R. J. Minneapolis
Hirschfield, Adolph. Minneapolis
Hcegh, Knut. Minneapolis
Holl, P. M. Minneapolis
Hunter, C. H. Minneapolis
Hvosief, Jakob. Minneapolis
Hynes, James Minneapolis
Hynes, J. E. Minneapolis
Ingraham, Elizabeth. Minneapolis
Irwin, A. F. Minneapolis
Jensen, M. J. Minneapolis
Johnson, A. E. Minneapolis
Jones, Herbert W. Minneapolis
Jones, W. A. Minneapolis
Kelsey, C. A. Minneapolis
Kennedy, Jane. Minneapolis
Kimball, H. H. Minneapolis
Kistler, C. M. Minneapolis
Kistler, J. M. Minneapolis
Knights, F. A. Minneapolis
Kriedt, Dan'l. Minneapolis
Lapierre, C. A. Minneapolis
Laton, W. S. Minneapolis
Law, A. A. Minneapolis
Lee, Thos. G. Minneapolis
Leland, H. N. Minneapolis
Lewis, J. M. Minneapolis
Lind, A. Minneapolis
Lind, C. J. Minneapolis
Linger, O. E. Minneapolis
Linton, W. B. Minneapolis
Little, J. W. Minneapolis

Litzenberg, J. C.....Minneapolis
 Loberg, A. E.....Minneapolis
 Long, Jesse.....Minneapolis
 Luther, Clara M.....Minneapolis
 McCollom, C. A.....Minneapolis
 McDaniel, Oriana.....Minneapolis
 McDonald, H. N.....Minneapolis
 McDonald, I. C.....Minneapolis
 McDougald, D. W.....Minneapolis
 McEachran, A.....Minneapolis
 McKee, C. S.....Minneapolis
 McMurdy, R. S.....Minneapolis
 Macdonald, J. W.....Minneapolis
 Macnie, J. S.....Minneapolis
 Malchow, C. W.....Minneapolis
 Mann, A. T.....Minneapolis
 Mead, Marion A.....Minneapolis
 Miles, Robert, Jr.....Minneapolis
 Mintener, J. W.....Minneapolis
 Mitchell, L. C.....Minneapolis
 Monahan, J. A.....Minneapolis
 Moore, J. E.....Minneapolis
 Moore, J. T.....Minneapolis
 Moorehead, Martha B.....Minneapolis
 Morton, H. McI.....Minneapolis
 Murdock, A. J.....Minneapolis
 Murphy, W. B.....Minneapolis
 Murray, Wm. R.....Minneapolis
 Musgrave, Samuel, Jr., Minneapolis
 Newhart, Horace.....Minneapolis
 Nickerson, M. L.....Minneapolis
 Nippert, L. A.....Minneapolis
 Nissen, Henrik.....Minneapolis
 Nootnagle, Chas.....Minneapolis
 Norred, C. H.....Minneapolis

Nye, W. F.....Minneapolis
 Olson, O. A.....Minneapolis
 Orton, H. N.....Minneapolis
 Owre, Oscar.....Minneapolis
 Parker, E. H.....Minneapolis
 Peters, R. M.....Minneapolis
 Petit, C. W.....Minneapolis
 Phillips, Edwin.....Minneapolis
 Pineo, W. B.....Minneapolis
 Poebler, F. T.....Minneapolis
 Porteous, W. N.....Minneapolis
 Quinby, Thos. F.....Minneapolis
 Reed, Chas. A.....Minneapolis
 Rees, S. P.....Minneapolis
 Ringnell, C. J.....Minneapolis
 Rishmiller, J. H.....Minneapolis
 Roberts, Cora B.....Minneapolis
 Roberts, Thos. S.....Minneapolis
 Robitshak, E. C.....Minneapolis
 Rochford, W. E.....Minneapolis
 Rutledge, J. W.....Minneapolis
 Scheifeik, J. F.....Minneapolis
 Schmidt, Karl H.....Minneapolis
 Schwyzer, G.....Minneapolis
 Seashore, Gilbert.....Minneapolis
 Sedgwick, J. P.....Minneapolis
 Shelden, W. D.....Minneapolis
 Simpson, Chas.....Minneapolis
 Simpson, J. D.....Minneapolis
 Slagle, C. G.....Minneapolis
 Smith, C. A.....Minneapolis
 Spratt, C. J.....Minneapolis
 Spratt, C. N.....Minneapolis
 Soderlind, A.....Minneapolis
 Staples, H. L.....Minneapolis

Stewart, J. Clark.....Minneapolis
 Straub, C. O.....Minneapolis
 Strout, E. S.....Minneapolis
 Stuart, J. H.....Minneapolis
 Sweetser, H. E.....Minneapolis
 Sweetzer, S. E.....Minneapolis
 Talbot, Ada E.....Minneapolis
 Thomas, David O.....Minneapolis
 Thomas, Geo. H.....Minneapolis
 Thorkelsen, Thorvald.....Minneapolis
 Tibbits, J. I.....Wayzata
 Tingdale, A. C.....Minneapolis
 Towers, F. E.....Minneapolis
 Towers, Mary E.....Minneapolis
 Ulrich, Henry L.....Minneapolis
 VanderHorck, M. P.....Minneapolis
 Van Cleve, S. H.....Minneapolis
 Wang, A. M.....Minneapolis
 Wanous, E. Z.....Minneapolis
 Warham, Thos. T.....Minneapolis
 Watson, J. A.....Minneapolis
 Watson, Jno.....St. Louis Park
 Wesbrook, F. F.....Minneapolis
 Weston, C. G.....Minneapolis
 Whetstone, Mary S.....Minneapolis
 Whipple, C. D.....Minneapolis
 White, S. M.....Minneapolis
 Wilcox, Van H.....Minneapolis
 Williams, C. W.....Minneapolis
 Williams, H. L.....Minneapolis
 Williams, U. G.....Minneapolis
 Woodard, F. R.....Minneapolis
 Woodworth, Elizabeth.....Minneapolis
 Wright, C. D.....Minneapolis
 Wright, F. R.....Minneapolis

Meeker County Medical Society

PRESIDENT
 Hildebrandt, E.Forest City
SECRETARY
 Robertson, J. W.....Litchfield

Austin, W. J.....Watkins
 Cassell, H. E.....Litchfield
 Chapman, W. E.....Litchfield
 Cutts, G. A. C.....Grove City
 Donovan, J. J.....Eden Valley

Kauffman, J. H.....Dassel
 Morell, HarryLitchfield

Wright County Medical Society

Regular meetings first Monday in January, April, July and October.
 Annual meeting in January.

PRESIDENT
 Shannon, E. A.Buffalo
SECRETARY
 Catlin, John J.Buffalo
 Berquist, K. E.....Cokato
 Bissell, F. S.....Maple Lake

Catlin, J. T.Delano
 Chilton, E. Y.....Howard Lake
 Hawkins, E. P.....Montrose
 Higgins, J. H.....Rockford
 Hill, A. L.Monticello
 Larson, C. L.....Buffalo
 Lynch, R. F.Monticello

O'Connor, J. P.....Delano
 O'Hair, P.....Waverly
 Ridgway, A. M.....Annandale
 Rogers, G. M. F.....Buffalo
 Shrader, E. E.....Watertown

Stearns-Benton County Medical Society

Regular meetings, third Thursday in January, April, July, and October
 Annual meeting in April.

PRESIDENT
 McMasters, James M..Sauk Center
SECRETARY
 Boehm, J. C.....St. Cloud
 Beaty, J. H.St. Cloud
 Beebe, W. L.St. Cloud
 Brigham, G. S.....St. Cloud
 Chilgren, G. A.....Sauk Rapids
 DuBois, Julian A.....Sauk Center

Dunn, John B.....St. Cloud
 Edmunds, I. L.....St. Cloud
 Ferree, George P..New Paynesville
 Hilbert, Pierre A.....Melrose
 Holdridge, Geo. A.....Foley
 Hubert, R. I.....St. Cloud
 Kern, Max J.....Freeport
 Kieghis, Adrian.....Sauk Center
 Lalonde, EdmundTorah
 Lamb, Harold L.....Sauk Center

Lewis, C. B.St. Cloud
 Lewis, Edwin J.....Sauk Center
 Maloy, Geo. E.....St. Cloud
 Moynihan, A. F.....Sauk Center
 Pilon, Pierre C.....New Paynesville
 Putney, Geo. E.....New Paynesville
 Sherwood, Geo. E.....Kimball
 Whiting, Arthur D.....St. Cloud
 Wolner, O. H.....St. Cloud
 Woods, E. A.....Clear Lake

Kandiyohi-Swift County Medical Society

Meetings at call of President.
 Annual meeting in April.

PRESIDENT
 Johnson, Christian.....Willmar
SECRETARY
 Newman, G. A.New London
 Archibald, F. M.....Atwater

Branton, Berton J.....Atwater
 Daignault, Oscar.....Benson
 Frost, F. H.....Willmar
 Frost, W. S.Willmar
 Hoftoe, Ole T.....New London
 Johnson, HansMurdock

McLaughlin, W. E.Willmar
 Peterson, J. R.....Willmar
 Rains, J. M.....Willmar
 Scofield, C. L.Benson

FIFTH DISTRICT

COUNCILOR, H. M. WORKMAN.....Tracy

Camp Release District Medical Society

Renville, Chippewa, Lac qui Parle, Yellow Medicine, and Sibley Counties

Regular meetings second Tuesday in January, April, July and October. Annual meeting in January.

PRESIDENT Jones, D. N.....Gaylord SECRETARY Zimbeck, R. D.....Montevideo Angell, W. A.....Canby Bacon, R. S.....Montevideo Beck, W. M.....Hanley Falls Burns, F. W.....Watson Burns, M. A.....Milan Bushey, M. E.....Arlington Carpenter, C. C.....Bird Island Carpenter, G. S.....Porter Clay, E. M.....Renville Cole, H. B.....Franklin Cressey, F. J.....Granite Falls Davison, P. C.....Clara City Duncan, Henry.....Marietta Ferguson, James B.....Olivia

Flower, Ward Z.....Gibbon Gammell, H. W.....Madison Giere, E. O.....Madison Hacking, F. H.....Granite Falls Helland, J. W.....Maynard Hendrickson, H. W.....Montevideo Hutchins, O. S.....Canby Johnson, A. E.....White Rock, S. D. Johnson, H. M.....Dawson Johnson, Otto F.....Winthrop Kanne, C. W.....Arlington Kilbride, J. S.....Canby Langford, J. J.....Green Isle Lee, Wm. P.....Fairfax Lima, Ludwig.....Montevideo Lumley, W. A.....Renville Mauer, E. L.....Clara City Mee, P. H.....Gaylord Mesker, G. H.....Olivia

Miller, F. C.....Olivia Moore, W. J.....Wood Lake Nelson, N. A.....Dawson Penhall, F. W.....Morton Powell, C. B.....Bellingham Rees, H.....Maynard Rogers, C. E.....Montevideo Rogers, H. W.....Montevideo Schjelderup, N. H.....Minneapolis Stemsrud, A. A.....Dawson Stoddard, A. G.....Fairfax Stolpestad, H. L.....Lafayette Stratton, W. M.....Granite Falls Strout, George E.....Winthrop Thrane, M.....Madison Titus, J. H.....Sacred Heart Watson, Charles W.....Boyd Watson, F. G.....Clarkfield

Brown-Redwood County Medical Society

Regular meetings first Tuesday in January, April, July and October. Annual meeting in January.

PRESIDENT Strickler, O. C.....New Ulm SECRETARY Brand, W. A.....Redwood Falls Adams, J. L.....Morgan Aldrich, F. H.....Belview Bayley, E. W.....Sleepy Eye Bickford, F. J.....Milroy

Clement, L. O.....Lamberton Fritsche, L. A.....New Ulm Gosslee, G. L.....Wabasso Gibson, C. P.....Redwood Falls Gray, F. D.....Vesta Meyer, E. L.....Walnut Grove Pease, Giles P.....Redwood Falls Reineke, G. F.....New Ulm Richards, G. W.....Sanborn

Rothenberg, J. C.....Springfield Schoch, J. L.....New Ulm Shrader, J. S.....Springfield Strickler, A. F.....Sleepy Eye Vogel, J. H.....New Ulm Weiser, G. B.....New Ulm Wellcome, J. W. B.....Sleepy Eye Wood, D. F.....Hanska Wicherski, O. G.....New Ulm

Lyon-Lincoln County Medical Society

PRESIDENT Valentine, W. H.....Tracy SECRETARY Workman, H. M.....Tracy Bacon, C. G.....Dayton Cox, A. J.....Tyler

Germo, Chas.....Balaton Hard, A. D.....Marshall Hoidale, A. D.....Tracy Jensen, J. C.....Hendricks Klovestad, Andrew.....Minnesota Krudson, B. C.....Tyler Persons, C. E.....Marshall

Robertson, J. B.....Cottonwood Schaleben, H. O.....Thief River Falls Thordarson, Th.....Minnesota Wakefield, Wm.....Lake Benton Weyrens, P. J.....Ivanhoe Wimer, T. H.....Marshall

SIXTH DISTRICT

COUNCILOR, A. E. SPALDING.....Luverne

Southwestern Society

Pipestone, Rock, Nobles, Murray, Cottonwood, and Jackson Counties

Regular meetings second Thursday in January and July. Annual meeting in January.

PRESIDENT Wright, C. O.....Lucerne SECRETARY King, Emil.....Fulda Beadie, W. D.....Windom Brown, A. H.....Pipestone Carr, E. M.....Pipestone Crowley, J. M.....Ellsworth Clark, A. H.....Worthington Dickman, A. L.....Lismore

Froshaug, S. J.....Hills Gerber, Lou M.....Jasper Geyerman, P. T.....Worthington Green, C. A.....Windom Jenckes, H. D.....Pipestone Humston, Roy.....Worthington Lowe, Thomas.....Pipestone Manson, F. M.....Worthington May, C. C.....Adrian Miller, Victor I.....Westbrook Moen, J. K.....Windom Nelson, C. P.....Westbrook

Ray, C. Wilbor.....Nicollet Rice, G. D.....Pipestone Richardson, W. E.....Slayton Schultz, A. J.....Dundee Searles, S. S.....Lakefield Spalding, A. E.....Luverne Stevens, C. C.....Jasper Sullivan, M.....Adrian Taylor, Wm. J.....Pipestone Tofte, Josephine.....Ruthton Wiedow, Henry.....Worthington Weiser, F. R.....Windom

Blue Earth Valley Medical Society

Faribault and Martin Counties

Regular meetings second Tuesday in January and July. Annual meeting in January.

PRESIDENT Johnson, H. P.....Fairmont SECRETARY Broberg, J. A.....Blue Earth Burton, C. N.....Elmore

Durgin, F. L.....Winnebago City Forbes, H. J.....Winnebago City Franklin, A. J.....Blue Earth City Hunt, F. N.....Blue Earth City Hunte, A. F.....Truman Jacobs, A. C.....Elmore

Leutke, G. H.....Fairmont Nannestad, J. R.....Albert Lea Richardson, W. J.....Fairmont Schmitt, S. C.....Blue Earth Urstad, O. H.....Kiester

Watonwan County Medical Society

Regular meetings, second Wednesday in even numbered months Annual meeting in December

PRESIDENT Haynes, B. H.....St. James SECRETARY Cooley, C. O.....Madelia

Bigelow, C. E.....Madelia Bissell, C. P.....Lewisville McCarthy, W. J.....Madelia Rowe, W. H.....St. James

Thompson, Albert.....St. James

SEVENTH DISTRICT

COUNCILOR, F. A. DODGE.....Le Sueur

Nicollet County Medical Society

Nicollet and the West Half of Le Sueur County

Regular meeting two times a year, in January and September, at call of the President.

PRESIDENT
Daniels, J. W.....St. Peter
SECRETARY
La Clerc, Joseph E.....LeSueur
Aitkins, H. B.LeSueur Center

Darling, W. H.....St. Peter
Dodge, F. A.....Le Sueur
Hopkins, M. P.....St. Peter
Kirk, D. A.....Le Sueur
McIntyre, G. W.....St. Peter

Merritt, Geo. F.....St. Peter
Strathern, F. P.....St. Peter
Theissen, W. M.....Henderson
Tomlinson, H. A.....St. Peter
Valin, H. D.....St. Peter

McLeod County Medical Society

Regular meetings first Thursday in January, April, July and October.
Annual meeting in January.

PRESIDENT
Sheppard, P. E.....Hutchinson
SECRETARY
James, P. E.Hutchinson
Axilrod, D. L.Hutchinson
Barrett, E. E.Glencoe

Bolles, D. W.....Brownton
Clark, H. S.....Glencoe
Clement, Jno. B.....Lester Prairie
Dorsey, John H.....Glencoe
Dulude, S.Winsted
Hovorka, T. W.Glencoe
Kohler, F. G.....Stewart

Nickerson, B. S.....Glencoe
Sheppard, Fred.....Hutchinson
Tinker, C. W.....Stewart
Vollmer, Jos.....Hutchinson
Wakefield, KeeHutchinson

Scott-Carver County Medical Society

Regular meetings first Thursday in March, June, September and December.
Annual meeting in December.

PRESIDENT
Grivelli, C. T.....Young America
SECRETARY
Reiter, H. W.Shakopee
Bohland, F. J.....Belle Plaine

Fischer, H. P.Shakopee
Landenberger, John.....New Prague
McKeon, James.....Montgomery
Moloney, G. R.....Belle Plaine
Novac, Edward E.....New Prague
Phelan, R. J.....Belle Plaine

Phillips, W. H.Jordan
Schneider, H. A.....Jordan
Smith, H. O.....Shakopee
Soper, John E.Norwood

Goodhue County Medical Society

Regular meetings, first Tuesday after the first Monday in January,
April, July and October
Annual meeting in January

PRESIDENT
Backe, Edward.....Kenyon
SECRETARY
Anderson, J. V.Red Wing
Brynildsen, H. L.....Vasa
Conley, A. T.....Cannon Falls

Conley, H. E.....Cannon Falls
Dimmitt, F. W.....Red Wing
Gates, J. A.Kenyon
Gryttenholm, K.....Zumbrota
Haesslev, S. B.....Cannon Falls
Hill, Charles.....Pine Island
Hewitt, C. N.Red Wing

Jaehrig, B.....Red Wing
Jones, A. W.....Red Wing
McKinstry, H. L.....Red Wing
Sawyer, H. P.....Goodhue
Watson, T. R.....Zumbrota
Wellner, G. C.....Red Wing

Rice County Medical Society

Regular meetings first Wednesday of January, April, July and October.
Annual meeting in January.

PRESIDENT
Rose, F. M.Faribault
SECRETARY
Warren, F. S.....Faribault
Boyd, F. P.Northfield
Brubaker, E. E.....Northfield
Campbell, E. P.....Faribault

Dodge, A. A.....Faribault
Greaves, Wm.....Northfield
Hunt, W. A.....Northfield
Huxley, F. R.Faribault
Macdonald, A.....Morristown
Mayland, M. L.....Faribault
Phillips, J. R.....Northfield
Pringle, A. F.....Northfield

Robillard, W. H.....Faribault
Rogers, A. C.....Faribault
Rumpf, W. H.....Faribault
Smith, P. A.....Faribault
White, J. B.....Montgomery
Wilkowski, C. W.....Faribault
Wilson, W.....Northfield

Wabasha County Medical Society

Regular meeting (annually) first Thursday after first Monday in July.

PRESIDENT
Cochrane, W. J.....Lake City
SECRETARY
Wilson, W. F.Lake City
Adams, J. C.....Lake City

Adams, W. T.Elgin
Bayley, E. H.....Lake City
Bond, J. F.....Wabasha
Davis, J. P.....Hammond
French, E. J.....Plainview
Gray, C. E.Rush City

Ingram, Lawrence...Zumbro Falls
Lester, Charles A.....Wabasha
McGuigan, HenryMazepa
McGuire, C. J.....Minneiska
Slocumb, J. A.....Plainview

EIGHTH DISTRICT

COUNCILOR, A. O. BJELLAND..... Mankato

Blue Earth County Medical Society

Regular meetings last Monday of each month.
Annual meeting, December meeting.

PRESIDENT
Holbrook, J. S.Mankato
SECRETARY
Liedloff, A. J.Mankato
Andrews, J. W.....Mankato
Beach, W. A.Mankato
Benham, E. W.....Amboy
Bjelland, A. O.....Mankato
Bomberger, F. J.....Mapleton
Brandenburg, F. D.....Mankato
Coon, Wm. F.Elysian
Curran, G. R.....Mankato

Dahl, G. A.Mankato
Davis, E. J.....Minnehaha
Davis, F. U.....St. Clair
Edwards, J. M.....Mankato
Grimes, H. F.....Lake Crystal
Hering, H. H.....Lake Crystal
Hielscher, J. A.Mankato
Holman, C. J.....Mankato
Holman, Madge T.....Mankato
Hughes, Helen.....Mankato
Hughes, Jane.....Mankato
James, J. H.....Mankato
Kelly, T. C.North Mankato

Krueger, L. W.....Mapleton
McMicheal, O. H.....Vernon Center
Merrill, J. E.....Amboy
Osborn, Lida.....Mankato
Parker, H. G.....Madison Lake
Schlesselman, J. T...Good Thunder
Schmauss, F. L.....Mankato
Smith, D. D.....Mankato
Schmitt, A. F.Mankato
Tyrrell, J. B.Waterville
Webster, I. D.....Mankato
Williams, Jno.....Lake Crystal

Dodge County Medical Society

Regular meetings, third Wednesday in January, May, and September
Annual meeting in May

PRESIDENT
Baker, A. L.Kasson
SECRETARY
Harrison, E. E.West Concord

Adams, R. T.Mantorville
Belt, W. E.Dodge Center
Bigelow, C. S.Dodge Center
Clifford, F. F.West Concord
Davis, F. W.Kasson

Thimsen, N.Hayfield
Way, O. F.Clairmont

Freeborn County Medical Society

Regular meetings, May and November
Annual meeting in January

PRESIDENT
Wedge, A. C.Albert Lea
SECRETARY
Burton, O. A.Albert Lea

Barck, G. W.Albert Lea
Freeman, J. P.Glenville
Hood, Mary E.Albert Lea
McKey, T. F.Albert Lea
Palmer, W. L.Glenville

Stevenson, Geo. A.Albert Lea
Todd, W. E.Albert Lea
Von Berg, J. P.Albert Lea
Wilcox, H. H.Albert Lea
Williams, Robt.Aldea

Houston-Fillmore County Medical Society

Regular meetings, first Thursday in January, April, July, and October
Annual meeting in January

PRESIDENT
Browning, W. E.Caledonia
SECRETARY
Drake, F. A.Lanesboro
Cady, Charles W.Mabel
Deters, W. A.Eitzen
Dunn, J. T.Wykoff

Fischer, O. F.Houston
Freeman, W. L.Chatfield
Gowdy, F. A.Harmony
Grinnell, W. B.Preston
Hart, A. B.Canton
Hvoslef, J. C.Lanesboro
Jensen, T.Spring Grove
Love, George A.Preston

Murphy, F. E.Caledonia
Nass, B. A.Mabel
Onsgard, L. K.Houston
Reay, G. R.Hokah
Rhines, D. C.Caledonia
Stabo, Trond.Spring Grove
Williams, R. V.Rushford
Woodruff, C. N.Chatfield

Mower County Medical Society

Regular meetings second Wednesday of January, April, July and October.
Annual meeting in October.

PRESIDENT
Pierson, H. F.Austin
SECRETARY
Leck, C. C.Austin
Allen, A. W.Austin
Chase, E. F.Adams
Cobb, W. F.Lyle

Daigneau, F. E.Austin
Flester, Fannie K.Austin
Frazer, W. A.Lyle
Gray, G. W.Brownsdale
Hart, M. J.Le Roy
Hegge, C. A.Austin
Hege, O. H.Austin
Henslin, A. E.Le Roy

Johnson, C. H.Austin
Lewis, C. F.Austin
Maercklein, C. J.Le Roy
Maercklein, O. C.Adams
Mitchell, R. S.Grand Meadow
Rogers, Emma.Austin
Schottler, G. J.Dexter
Schultz, F. W.Waltham

Olmsted County Medical Society

Regular meetings, last Tuesday of the odd numbered months
Annual meeting in January

PRESIDENT
Granger, Chas. T.Rochester
SECRETARY
Crewe, John E.Rochester
Dugan, R. C.Eyota
Fawcett, Charles.Stewartville
Graham, C.Rochester
Gulick, W. V.Oronoco

Heyerdale, O. C.Rochester
Joyce, George T.Rochester
Judd, E. S.Rochester
Kilbourne, A. F.Rochester
Linton, Laura.Rochester
Maschger, A. P.Rochester
Mayo, C. H.Rochester
Mayo, W. J.Rochester
Millet, M. C.Rochester

Mosse, F. R.Rochester
Phelps, R. M.Rochester
Plummer, H. S.Rochester
Smith, Frank D.Oronoco
Steven, George.Byron
Stinchfield, A. W.Rochester
Wilson, L. B.Rochester
Witherstine, H. H.Rochester

Steele County Medical Society

Regular meetings first Tuesday in odd numbered months,
Annual meeting in January.

PRESIDENT
Eustis, W. C.Owatonna
SECRETARY
Stewart, Allan B.Owatonna

Adair, John H.Owatonna
Andrist, James W.Ellendale
Bigelow, Edward E.Owatonna
Hatch, Theo. L.Owatonna

Morehouse, G. G.Owatonna
Schulze, George.Owatonna
Smersh, Francis M.Owatonna
Wood, William S.Blooming Prairie

Waseca County Medical Society

Regular meetings, first Monday in January, April, July and October.
Annual meeting in January.

PRESIDENT
Chamberlin, W. A.Waseca
SECRETARY
Lynn, J. F.Waseca

Cory, Wm. M.Waterville
Cummings, D. S.Waseca
Batchelder, E. J.New Richland
Blanchard, H. G.Waseca
Greene, F. W.Waterville

Hagen, H. O.New Richland
O'Hara, J. J.Janesville
Swartwood, F. A.Waseca
Taylor, M. J.Janesville

Winona County Medical Society

Regular meetings first Tuesday in January, April, July and October.
Annual meeting in January.

PRESIDENT
McGaughey, H. F.Winona
SECRETARY
McGaughey, J. B.Winona
Blair, Paul B.Winona
Boyd, C. A.Lewiston
Brown, Harry.Rollingstone
Clark, C. N.St. Charles
Dudley, H. D.
.....Cananea, Sonora, Mexico

Gates, G. L.Winona
Heise, W. F. C.Winona
Keyes, E. D.Winona
Lane, N. S.Winona
Leicht, Oswald.Winona
Lichtenstein, H. M.Winona
Lynch, J. L.Winona
McLaughlin, E. M.Winona
Muir, Edwin S.Winona
Munger, L. H.Winona
Neumann, W. H.Lewiston

Olsen, O. R.St. Charles
Pritchard, D. B.Winona
Robbins, C. P.Winona
Rollins, F. H.St. Charles
Scott, J. W.St. Charles
Steinbach, John.Winona
Stewart, D. A.Winona
Tweedy, G. J.Winona

ALPHABETICAL ROSTER

Abbott, A. W. Minneapolis
 Abbott, C. U. Aurora
 Abbott, E. J. St. Paul
 Aborn, Wm. H. Hawley
 Adair, F. L. Minneapolis
 Adair, John H. Owatonna
 Adams, B. S. Hibbing
 Adams, J. C. Lake City
 Adams, J. L. Morgan
 Adams, R. T. Mantorville
 Adams, W. T. Elgin
 Aitkens, H. B., Le Sueur Center
 Aldrich, A. G. Minneapolis
 Aldrich, F. H. Belview
 Alexander, F. H. Barnesville
 Alger, E. W. Minneapolis
 Aling, C. P. Minneapolis
 Allen, A. W. Austin
 Allen, Frank H. Staples
 Allen, Mason St. Paul
 Ancker, A. B. St. Paul
 Anderson, A. E. Minneapolis
 Anderson, C. A. Rush City
 Anderson, J. D. Minneapolis
 Anderson, J. V. Red Wing
 Anderson, W. S. Warren
 Andrews, J. W. Mankato
 Andrist, James W. Ellendale
 Angell, W. A. Canby
 Appleby, E. V. St. Paul
 Archibald, F. M. Atwater
 Arey, H. C. Excelsior
 Armstrong, J. M. St. Paul
 Armstrong, L. W. Breckenridge
 Aurdand, W. H. Minneapolis
 Aurness, P. A. Minneapolis
 Austin, W. J. Watkins
 Avery, J. F. Aitkin
 Awty, W. J. Moorhead
 Axilrod, D. L. Hutchinson
 Ayers, G. T. Ely
 Aylmer, A. L. Minneapolis

Backe, Edw. Kenyon
 Bacon, C. G. Dayton
 Bacon, H. P. Milaca
 Bacon, L. C. St. Paul
 Bacon, R. S. Montevideo
 Bagley, W. R. Duluth
 Baier, Florence C. Minneapolis
 Baker, A. C. Stephen
 Baker, A. C. Fergus Falls
 Baker, A. L. Kasson
 Bakke, O. H. Minneapolis
 Balcome, F. E. St. Paul
 Barber, J. P. Minneapolis
 Barck, G. W. Albert Lea
 Barnum, E. E. Pine City
 Barrett, E. E. Glencoe
 Barrett, E. F. Eveleth
 Barsness, Nellie St. Paul
 Bartlett, C. K. Minneapolis
 Bartlett, W. K. Minneapolis
 Barton, E. R. Frazee
 Barton, G. C. Minneapolis
 Bass, G. W. Minneapolis
 Batchelder, E. J. New Richland
 Batcheller, Oliver T. Brainerd
 Baxter, S. H. Minneapolis
 Bayley, E. H. Lake City
 Bayley, E. W. Sleepy Eye
 Beach, W. A. Mankato
 Beachler, G. F. Minneapolis
 Beadie, W. D. Windom
 Beard, R. O. Minneapolis
 Beatty, J. H. St. Cloud
 Beck, W. M. Hanley Falls
 Beckley, F. L. St. Paul
 Beckman, E. H. Minneapolis
 Beebe, Warren L. St. Cloud
 Behrens, B. M. Minneapolis
 Bell, J. W. Minneapolis
 Belshelm, A. G. Aitkin
 Belt, W. E. Dodge Center
 Benep, L. M. St. Paul
 Benham, E. W. Amboy
 Benjamin, A. E. Minneapolis
 Bennion, P. H. St. Paul
 Berquist, K. E. Cokato
 Bertelson, O. L. Crookston
 Berthold, J. L. Perham
 Bessen, A. N. Minneapolis
 Bettingen, J. W. St. Paul
 Bevan, Charles J. Villard

Bickford, F. J. Milroy
 Bigelow, C. E. Madelia
 Bigelow, C. S. Dodge Center
 Bigelow, Edward E. Owatonna
 Bishop, C. W. Minneapolis
 Bissell, C. P. Lewisville
 Bissell, F. S. Maple Lake
 Bjelland, A. O. Mankato
 Blacklock, S. S. Hibbing
 Blair, Paul B. Winona
 Blake, James Hopkins
 Blanchard, H. G. Waseca
 Bloom, Wm. D. Toronto, Canada
 Boeckman, M. Thief River Falls
 Boeckmann, E. St. Paul
 Boeckmann, Egill St. Paul
 Boehm, J. C. St. Cloud
 Bohland, F. J. Belle Plaine
 Boleyn, E. S. Stillwater
 Bolles, D. W. Brownton
 Bolsta, Chas. Ortonville
 Bomberger, F. J. Mapleton
 Bond, J. F. Wabasha
 Bouman, H. A. Minneapolis
 Boxell, C. E. St. Paul
 Boyd, C. A. Lewiston
 Boyd, F. P. Northfield
 Boyd, H. J. Alexandria
 Boyer, S. H. Duluth
 Braasch, W. F. Minneapolis
 Brabec, F. J. Perham
 Bracken, H. M. St. Paul
 Braden, A. J. Duluth
 Bradley, C. H. Minneapolis
 Brand, W. A. Redwood Falls
 Brandenburg, F. D. Mankato
 Branton, Berton J. Atwater
 Bratrud, Theodore Warren
 Bray, C. W. Biwabik
 Brigham, G. S. St. Cloud
 Broberg, J. A. Blue Earth
 Brooks, D. F. St. Paul
 Brooks, G. F. Stevenson
 Brown, A. H. Pipestone
 Brown, E. I. St. Paul
 Brown, E. J. Minneapolis
 Brown, Harry Rolling Stone
 Brown, Leroy St. Paul
 Brown, R. S. Minneapolis
 Browning, W. E. Caledonia
 Brubaker, E. E. Northfield
 Brunelle, A. M. Cloquet
 Brynildsen, H. L. Vasa
 Budd, J. D. Two Harbors
 Bullen, F. W. Eveleth
 Burch, F. St. Paul
 Burfiend, G. H. Afton
 Burnam, C. F. St. Paul
 Burnap, W. L. Pelican Rapids
 Burns, F. W. Watson
 Burns, M. A. Milan
 Busch, M. F. Pelican Rapids
 Burton, C. N. Elmore
 Burton, O. A. Albert Lea
 Bushey, M. E. Arlington
 Butchart, S. M. Hibbing
 Byrnes, W. J. Minneapolis

Cady, Charles W. Mabel
 Caine, C. E. Morris
 Caldwell, D. K. Milaca
 Caley, G. R. Princeton
 Cameron, J. A. St. Paul
 Cameron, William G. Staples
 Camp, James L. Brainerd
 Campbell, E. P. Faribault
 Campbell, J. E. St. Paul
 Campbell, R. A. Minneapolis
 Cannon, Charles M. St. Paul
 Cannon, Harry St. Paul
 Carlaw, C. M. Minneapolis
 Carman, J. B. Detroit
 Carpenter, C. C. Bird Island
 Carpenter, G. S. Porter
 Carr, E. M. Pipestone
 Carson, J. H. Duluth
 Cary, H. E. Minneapolis
 Casseday, F. F. Rosemount
 Cassell, H. E. Litchfield
 Cates, A. B. Minneapolis
 Catlin, John J. Buffalo
 Catlin, T. J. Delano
 Cavanaugh, J. O. St. Paul
 Chamberlin, J. W. St. Paul

Chamberlin, W. A. Waseca
 Chambers, W. C. Stillwater
 Chance, J. P. Royalton
 Chapin, J. S. Euclid
 Chapman, O. S. Minneapolis
 Chapman, W. E. Litchfield
 Chase, E. F. Adams
 Cheney, E. L. Duluth
 Children, G. A. Sauk Rapids
 Chilton, E. Y. Howard Lake
 Chowning, W. M. Minneapolis
 Christenson, C. R. Starbuck
 Christie, George R. Long Prairie
 Christison, J. T. St. Paul
 Cirkler, A. A. Minneapolis
 Clark, A. H. Worthington
 Clark, C. N. St. Charles
 Clark, H. S. Glencoe
 Clark, T. C. Stillwater
 Clay, E. M. Renville
 Clement, Jno. B. Lester Prairie
 Clement, L. O. Lamberton
 Cleland, H. E. Osakis
 Clifford, F. F. West Concord
 Cobb, W. F. Lyle
 Cochrane, W. J. Lake City
 Cockburn, J. C. Minneapolis
 Cohen, H. A. Minneapolis
 Cole, Herman B. Franklin
 Collins, H. Duluth
 Colvin, A. R. St. Paul
 Condit, W. H. Minneapolis
 Conheim, Eva St. Paul
 Conkey, C. D. Duluth
 Conley, A. T. Cannon Falls
 Conley, H. E. Cannon Falls
 Cook, Paul B. St. Paul
 Cooke, W. H. Minneapolis
 Coon, Geo. M. St. Paul
 Coon, Wm. F. Elysian
 Cooney, H. C. Princeton
 Cooke, W. H. Minneapolis
 Cooley, C. O. Madelia
 Cooper, J. D. Dent
 Corbett, J. F. Minneapolis
 Cory, Wm. M. Waterville
 Cosmann, E. O. Minneapolis
 Coulter, Chas. F. Wadena
 Course, Chas. Verndale
 Courtney, Walter Brainerd
 Coventry, W. A. Duluth
 Cowan, D. W. Sandstone
 Cowing, Phil. G. Ashby
 Cowles, D. C. Minneapolis
 Cox, A. J. Tyler
 Crafts, Leo M. Minneapolis
 Cressey, F. J. Granite Falls
 Crewe, John E. Rochester
 Crosby, J. A. Minneapolis
 Cross, Jno. G. Minneapolis
 Crowe, J. H. Virginia
 Crowley, J. M. Ellsworth
 Crume, Geo. P. Minneapolis
 Cuff, Wm. S. St. Paul
 Cummings, D. S. Waseca
 Cummings, J. C. St. Hilaire
 Curran, G. R. Mankato
 Cutts, G. A. C. Grove City

Dahl, G. A. Mankato
 Daignault, Oscar Benson
 Daigneau, F. E. Austin
 Dampier, C. E. Crookston
 Daniels, J. W. St. Peter
 Danielson, K. A. Twin Valley
 Darling, J. B. St. Paul
 Darling, W. H. St. Peter
 Darrow, Daniel C. Moorhead
 Dart, L. O. Minneapolis
 Daugherty, E. B. Eveleth
 Davis, E. J. Minnehaha
 Davis, F. U. St. Clair
 Davis, H. S. Duluth
 Davis, F. W. Kasson
 Davis, H. P. St. Paul
 Davis, J. W. Hammond
 Davis, L. A. Dalton
 Davis, William St. Paul
 Davison, P. C. Clara City
 Dawson, C. A. Glyndon
 Day, L. W. Minneapolis
 Dearborn, E. Minneapolis
 Dennis, W. A. St. Paul
 Denniston, C. H. Crookston
 Deslauriers, A. A. Duluth

Desmond, M. A.	Eagle Bend	Gilkinson, A. J.	Osakis	Hoidale, A. D.	Tracy
Deters, W. A.	Eitzen	Gilmore, R.	Bemidji	Hoit, Edward E.	Detroit
Detling, F. E.	Duluth	Golberg, M. L.	Twin Valley	Holbrook, J. S.	Mankato
Deziel, G.	Minneapolis	Goodrich, Judd	St. Paul	Holdridge, Geo. A.	Foley
Dickman, A. L.	Lismore	Gosslee, G. L.	Wabasso	Holl, F. M.	Minneapolis
Dimmitt, F. W.	Red Wing	Gould, J. B.	Minneapolis	Holman, C. J.	Mankato
Dinwoodie, Wm.	St. Paul	Gowdy, F. A.	Harmony	Holman, Madge T.	Mankato
Disen, C. F.	Minneapolis	Graham, B. F.	Minneapolis	Holst, C. F.	Little Falls
Dodge, A. A.	Faribault	Graham, C.	Rochester	Holst, J. B.	Little Falls
Dodge Franklin A.	Le Sueur	Graham, D.	Duluth	Holte, H.	Crookston
Dodge, W. M.	St. Paul	Graham, R.	Duluth	Hood, Mary E.	Albert Lea
Dohm, C. L.	St. Paul	Granger, Chas. T.	Rochester	Hopkins, M. P.	St. Peter
Donaldson, C. A.	Minneapolis	Gravelle, J. M. A.	St. Paul	Hovde, A. G.	Biwabik
Donovan, J. J.	Eden Valley	Graves, Carlton	Aitkin	Hovde, H.	Duluth
Doran, G. W.	St. Paul	Gray, C. E.	Rush City	Hovorka, T. W.	Glencoe
Dorsey, John H.	Glencoe	Gray, F. D.	Vesta	Hubert, R. I.	St. Cloud
Drake, F. A.	Lanesboro	Gray, G. W.	Brownsdale	Hughes, Helen	Mankato
Dredge, H. P.	Sandstone	Grawn, F. A.	Duluth	Hughes, Jane	Mankato
Drenning, F. C.	Duluth	Greaves, Wm.	Northfield	Hulburd, H. L.	Morris
Driesbach, N. C.	Minneapolis	Greeley, L. Q.	Duluth	Humiston, Roy.	Worthington
DuBois, Julian A.	Sauk Center	Green, C. A.	Windom	Humphrey, E. W.	Moorhead
Dudley, H. D. ....	.....	Green, E. K.	Minneapolis	Hunt, F. N.	Blue Earth City
.....	Cananea, Sonora, Mexico	Greene, C. L.	St. Paul	Hunt, W. A.	Northfield
Dugan, R. C.	Eyota	Greene, F. W.	Waterville	Hunte, A. F.	Truman
Dulude, S.	Winsted	Grimes, H. F.	Lake Crystal	Hunter, C. H.	Minneapolis
Dumas, C. H.	Minneapolis	Grinnell, W. B.	Preston	Hutchins, O. S.	Canby
Duncan, Henry	Marietta	Griswold, F. E.	Hoffman	Huxley, F. R.	Faribault
Duncan, W. T.	Fergus Falls	Grievelli, C. T.	Young America	Hvoslef, Jakob	Minneapolis
Dunlop, A. H.	Crookston	Gronvold, F. O.	Gary	Hvoslef, J. C.	Lanesboro
Dunn, John B.	St. Cloud	Gordon, G. J.	Minneapolis	Hyde, Leon W.	Moorhead
Dunn, J. T.	Wykoff	Groves, A. F.	Brainerd	Hyerdale, O. C.	Rochester
Dunning, A. W.	St. Paul	Gryttenholm, K.	Zumbrota	Hynes, James	Minneapolis
Dunsmoor, F. A.	Minneapolis	Guilford, H. M.	Minneapolis	Hynes, J. E.	Minneapolis
Durgin, F. L.	Winnebago City	Gulseth, Gustave.	Henning	Ingraham, Elizabeth.	Minneapolis
Earl, Robert O.	St. Paul	Gunz, A. N.	Oronoco	Ingram, Lawrence.	Zumbro Falls
Eberlin, E. A.	Glennwood	Hacking, F. H.	Centre City	Irwin, A. F.	Minneapolis
Edmunds, I. L.	St. Cloud	Haessley, S. B.	Cannon Falls	Jacobs, A. C.	Elmore
Edwards, J. M.	Mankato	Hagaman, G. K.	Minneapolis	Jaehrig, B.	Red Wing
Edge, T. S.	Moorhead	Hagen, H. O.	New Richland	James, J. H.	Mankato
Eitel, Geo. G.	Minneapolis	Haggard, G. D.	Minneapolis	James, P. E.	Hutchinson
Eklund, J. J.	Duluth	Haines, J. H.	Stillwater	James, R. C.	Hibbing
Erb, Frederick A.	Minneapolis	Hall, A. R.	St. Paul	Jern, J. H.	Duluth
Eustis, Warren C.	Owatonna	Hall, Charlotte	St. Paul	Jenckes, H. D.	Pipestone
Ewing, C. E.	Wheaton	Hall, W. A.	Minneapolis	Jensen, J. C.	Hendricks
Fahey, E. W.	Duluth	Hamilton, A. R.	Minneapolis	Jensen, M. J.	Minneapolis
Farley, F. X.	Crookston	Hanson, Geo. C.	Climax	Jensen, T.	Spring Grove
Farmer, J. C.	McKinley	Hanson, M.	Hendrum	Johnson, A. E.	Cloquet
Farr, R. E.	Minneapolis	Hard, A. D.	Marshall	Johnson, A. E.	Minneapolis
Fawcett, Charles	Stewartville	Hare, E. R.	Minneapolis	Johnson, A. E.	White Rock, S. D.
Ferguson, James B.	Olivia	Harrah, J. W.	Minneapolis	Johnson, Asa	St. Paul
Ferguson, J. C.	St. Paul	Harrington, C. D.	Minneapolis	Johnson, Christian	Willmar
Ferree, George P.	New Paynesville	Harrison, E. E.	West Concord	Johnson, C. H.	Austin
Fiester, Fannie K.	Austin	Hart, A. B.	Canton	Johnson, Hans.	Murdock
Fifield, Emily W.	Minneapolis	Hart, M. J.	Le Roy	Johnson, H. C.	St. Paul
Fischer, H. P.	Shakopee	Hartzell, Thos. B.	Minneapolis	Johnson, H. M.	Dawson
Fischer, O. F.	Houston	Harwood, W. E.	Eveleth	Johnson, H. P.	Fairmont
Fitzgerald, R. J.	Minneapolis	Haskell, A. W.	Carlos	Johnson, I. W.	Eveleth
Fjelstad, C. A.	Glennwood	Hatch, Theodore L.	Owatonna	Johnson, J. S.	St. Paul
Flagg, S. D.	St. Paul	Haugan, O. M.	Fergus Falls	Johnson, Otto F.	Winthrop
Fleming, A. S.	Wheaton	Haverfield, Addie R.	Minneapolis	Jones, A. W.	Red Wing
Flemming, James	Cloquet	Hawkins, E. P.	Montrose	Jones, D. C.	St. Paul
Flower, Ward Z.	Gibbon	Hawkins, V. J.	St. Paul	Jones, D. N.	Gaylord
Forbes, H. J.	Winnebago City	Haynes, B. H.	St. James	Jones, Herbert W.	Minneapolis
Force, J. F.	Pasadena, Cal.	Haynes, F. E.	Minneapolis	Jones, S. S.	Frazee
Fortier, Geo. M. A.	Little Falls	Head, Geo. D.	Minneapolis	Jones, Talbot	St. Paul
Foster, Burnside	St. Paul	Heath, A. C.	St. Paul	Jones, W. A.	Minneapolis
Franklin, A. J.	Blue Earth City	Hegge, C. A.	Austin	Joyce, Geo. T.	Rochester
Frasier, G. W.	Detroit	Hegge, O. H.	Austin	Judd, E. S.	Rochester
Frazer, W. A.	Lyle	Heimark, C. B.	Battle Lake	Kaess, A. J.	Moorhead
Freeborn, J. A.	Fergus Falls	Heimark, J. H.	Cyrus	Kalinoff, D.	Stillwater
Freeman, J. P.	Glenville	Heimark, O. E.	Hawley	Kane, J. P.	St. Paul
Freeman, W. L.	Chatfield	Heise, W. F. C.	Winona	Kanne, C. W.	Arlington
Freligh, E. O. B.	Stillwater	Helk, H. H.	Minneapolis	Karn, J.	Ortonville
French, E. J.	Plainview	Helland, J. W.	Maynard	Kaufman, J. H.	Dassel
Fritschie, L. A.	New Ulm	Hemstead, Werner	Brainerd	Kelley, W. D.	St. Paul
Frosbaugh, S. J.	Hills	Henderson, A.	Scanlon	Kelley, B. W.	Hickory
Frost, E. H.	Willmar	Hendrickson, H. W.	Montevideo	Kelly, T. C.	North Mankato
Frost, W. S.	Willmar	Henry, C. E.	Minneapolis	Kelsey, C. A.	Minneapolis
Fryberger, W. C.	Minneapolis	Hensel, E. A.	Alexandria	Kennedy, Jane	Minneapolis
Fullerton, Ellen C.	Rochester	Henslin, A. E.	Le Roy	Kenyon, Paul E.	Wadena
Fullerton, W. S.	St. Paul	Hering, H. H.	Lake Crystal	Kern, Max J.	Freeport
Gambell, S. H.	Thief River Falls	Hertzman, C. O.	Lindstrom	Keyes, C. R.	Duluth
Gammell, H. W.	Madison	Hewitt, C. N.	Red Wing	Keyes, E. D.	Winona
Gans, E. M.	Eveleth	Heyerdale, O. C.	Rochester	Kieghis, Adrian.	Sauk Center
Gates, G. L.	Winona	Hielscher, J. A.	Mankato	Kilbourne, A. F.	Rochester
Gates, J. A.	Kenyon	Higgins, J. H.	Rockford	Kilbride, J. S.	Canby
Geist, Emil S.	Minneapolis	Hilbert, Pierre A.	Melrose	Kimball, H. H.	Minneapolis
George, Jas. W.	Aitkin	Hildebrandt, E.	Forest City	King, Emil	Fulda
Gerber, Lou M.	Jasper	Hill, A. L.	Monticello	Kinnear, T. J.	Eveleth
Germain, R. T.	Barnesville	Hill, Charles.	Pine Island	Kirk, D. A.	Le Sueur
Germo, Chas.	Balaton	Hill, R. J.	Minneapolis	Kistler, A. S.	St. Paul
Gerverman, P. T.	Worthington	Hirschfield, Adolph.	Minneapolis	Kistler, C. M.	Minneapolis
Gibbon, L. L.	Lowry	Hirschfield, M. S.	Duluth	Kistler, J. M.	Minneapolis
Gibson, C. P.	Redwood Falls	Hixon, R. B.	Cambridge	Kittleson, Thos. N.	Fergus Falls
Giere, E. O.	Madison	Hodgson, H. H.	Crookston	Kjelland, J. S.	Crookston
Giffillan, J. S.	St. Paul	Hoegh, Knut	Minneapolis	Kling, F. L.	Pelican Rapids
Gillette, A. J.	St. Paul	Hoff, Peder A.	St. Paul		
		Hoftoe, Ole T.	New London		

Klovstad, Andrew	Minneota	McKinstry, H. L.	Red Wing	Nissen, Henrik	Minneapolis
Knauff, M. K.	Two Harbors	McLaren, Jennette M.	St. Paul	Nissen, Henrik	Minneapolis
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Knights, F. A.	Minneapolis	McLaughlin, W. E.	Willmar	Norin, F. L.	Roseau
Knudson, B. C.	Tyler	McLean, T. N.	Fergus Falls	Norred, C. H.	Minneapolis
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Kraft, P.	Duluth	McMurdy, R. S.	Minneapolis	Novac, E. E.	New Prague
Kriedt, Dan'l	Minneapolis	Macdonald, A.	Morristown	Nuckolls, G. W.	Tintah
Krueger, L. W.	Mapleton	Macdonald, Angus	St. Paul	Nye, W. F.	Minneapolis
Kuth, J. R.	Duluth	Macdonald, J. W.	Minneapolis	Nyquist, J. E.	Cloquet
La Clerc, Joseph E.	Le Sueur	MacLaren, Archibald	St. Paul	O'Brien, H. J.	St. Paul
Lalonde, Edmund	Torah	Macnie, J. S.	Minneapolis	O'Connor, J. P.	Delano
Lamb, Harold L.	Sauk Center	Maercklein, C. J.	Le Roy	O'Connor, J. V.	St. Paul
Landeen, F. G.	Stillwater	Maercklein, O. C.	Adams	O'Hair, P.	Waverly
Landenberger, John	New Prague	Magie, W. H.	Duluth	O'Hara, J. J.	Janesville
Lando, D. H.	St. Paul	Magnuson, C.	Clinton	Oftel, H. A.	Oslo
Lane, N. S.	Winona	Malchow, C. W.	Minneapolis	Ohnstad, J.	McIntosh
Langford, J. J.	Green Isle	Maloy, Geo. E.	St. Cloud	Oliver, C. I.	Graceville
Lankester, Howard	St. Paul	Mallory, J. N.	Emily	Olsen, O. R.	St. Charles
Lapierre, C. A.	Minneapolis	Maloney, T. J.	St. Paul	Olson, O. A.	Minneapolis
Larson, C. L.	Buffalo	Mann, A. T.	Minneapolis	Olson, O. H.	Erskine
Laton, W. S.	Minneapolis	Manson, F. M.	Worthington	Olson, S. H.	Milaca
Law, A. A.	Minneapolis	Manson, F. M.	Worthington	Onsgard, L. K.	Houston
Leavitt, F. E.	St. Paul	Maris, Emily	Duluth	Oredson, O. A.	Duluth
Leck, C. C.	Austin	Markoe, J. C.	St. Paul	Orton, H. N.	Minneapolis
Lee, C. E.	St. Paul	Maschger, A. P.	Rochester	Osborn, Lida	Mankato
Lee, K. J.	Alexandria	Mathisen, G. B.	Evansville	Owre, Oscar	Minneapolis
Lee, Thos. G.	Minneapolis	Mauer, E. L.	Clara City		
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Leicht, Oswald	Winona	Mayland, M. L.	Faribault	Pare, L. T.	Duluth
Leland, H. N.	Minneapolis	Mayo, C. H.	Rochester	Parker, E. H.	Minneapolis
Lemieux, Israel	Red Lake Falls	Mayo, W. J.	Rochester	Parker, H. G.	Madison Lake
Lenont, C. B.	Virginia	Meade, C. J.	St. Paul	Parker, O. W.	Ely
Leche, Wm	St. Paul	Mead, Marion A.	Minneapolis	Parrott, B. W.	Long Prairie
Lester, C. A.	Wabasha	Meckstroth, C. W.	Brandon	Patterson, F. L.	Lancaster
Leutke, G. H.	Fairmont	Mee, P. H.	Gaylord	Patton, F. J.	Duluth
Leuty, Amos	Morris	Melby, O. F.	Warren	Payette, C. H.	Duluth
Lewis, A. J.	Mora	Merrill, B. J.	Stillwater	Pease, Giles P.	Redwood Falls
Lewis, C. B.	St. Cloud	Merrill, J. E.	Amboy	Peddicord, H.	St. Paul
Lewis, C. F.	Austin	Merritt, Geo. F.	St. Peter	Penhall, F. W.	Morton
Lewis, Edwin J.	Sauk Center	Mesker, G. H.	Olivia	Peters, C. E.	Marshall
Lewis, J. D.	St. Paul	Meyer, E. L.	Walnut Grove	Peters, R. M.	Minneapolis
Lewis, J. M.	Minneapolis	Miles, Robert, Jr.	Minneapolis	Peterson, J. R.	Willmar
Lewis, W. W.	St. Paul	Miller, A. W.	St. Paul	Petit, C. W.	Minneapolis
Lichtenstein, H. M.	Winona	Miller, C. C.	St. Paul	Phelan, R. J.	Belle Plaine
Liedloff, A. G.	Mankato	Miller, F. C.	Olivia	Phelps, R. M.	Rochester
Lima, Ludwig	Montevideo	Miller, Victor I.	Westbrook	Phillips, Edwin	Minneapolis
Lind, A.	Minneapolis	Miller, W. A.	New York Mills	Phillips, J. R.	Northfield
Lind, C. J.	Minneapolis	Millet, M. C.	Rochester	Phillips, W. H.	Jordan
Linde, Herman	Cyrus	Millsbaugh, J. G.	Little Falls	Phillips, W. H.	Jordan
Linjer, O. E.	Minneapolis	Mintener, J. W.	Minneapolis	Pierson, H. F.	Austin
Linnemann, N. L.	Duluth	Mitchell, F.	Euclid	Pilon, Pierre C.	New Paynesville
Linton, Laura	Rochester	Mitchell, L. C.	Minneapolis	Pine, A. A.	St. Paul
Linton, W. B.	Minneapolis	Mitchell, R. S.	Grand Meadow	Pine, O. S.	St. Paul
Little, W. J.	St. Paul	Moen, J. K.	Windom	Pineo, W. B.	Minneapolis
Little, J. W.	Minneapolis	Moloney, G. R.	Belle Plaine	Plummer, H. S.	Rochester
Litzenberg, J. C.	Minneapolis	Monahan, J. A.	Minneapolis	Poehler, F. T.	Minneapolis
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Long, Jesse	Minneapolis	Moore, L. A.	Tower	Powell, C. B.	Bellingham
Love, Geo. A.	Preston	Moore, W. J.	Wood Lake	Pratt, W. H.	Stillwater
Lowe, T.	Pipestone	Morehouse, G. G.	Owatonna	Pringle, A. F.	Northfield
Lum, C. E.	Duluth	Moorehead, Martha B.	Minneapolis	Pritchard, D. B.	Winona
Lumley, W. A.	Renville	More, C. W.	Eveleth	Putnam, Catherine E.	St. Paul
Lundgren, C. E.	Harris	Morell, Harry	Litchfield	Putney, Geo. E.	New Paynesville
Luther, Clara M.	Minneapolis	Morley, G. A.	Crookston		
Lyman, F. V.	Beltrami	Morrison, William R.	Bemidji	Quinby, Thos. F.	Minneapolis
Lynam, F.	Duluth	Morton, H. McI.	Minneapolis	Quinn, J. A.	St. Paul
Lynch, J. L.	Winona	Mosse, F. R.	Rochester	Quintmeyer, O. C.	Parkers Prairie
Lynch, R. F.	Monticello	Mowers, S. W.	Brainerd		
Lyng, John A.	Minneapolis	Moynihan, A. F.	Sauk Center	Rains, J. M.	Willmar
Lynn, J. F.	Waseca	Muir, Edwin S.	Winona	Ramsey, W. R.	St. Paul
Lyons, A.	Pine City	Muir, J. B.	Roseau	Randall, B. M.	Graceville
		Munger, L. H.	Winona	Randall, J. M.	Underwood
McAuliff, J.	Duluth	Murdoch, A. J.	Minneapolis	Ransom, M. L.	Hancock
McCarthy, W. J.	Madelia	Murphy, F. E.	Caledonia	Ray, C. Wilbor	Nicollet
McCullom, C. A.	Minneapolis	Murdoch, H. G.	Taylor's Falls	Reay, G. R.	Hokah
McComb, C. F.	Duluth	Murphy, W. B.	Minneapolis	Reed, Chas. A.	Minneapolis
McCoy, Mary	Duluth	Murray, D. D.	Duluth	Rees, H.	Maynard
McCuen, J. A.	Duluth	Murray, Wm. R.	Minneapolis	Rees, S. P.	Minneapolis
McCullogh, George	Motley	Musgrave, Samuel, Jr.	Minneapolis	Reeves, C. E.	Clarissa
McDaniel, Oriana	Minneapolis	Muus, Peter H.	Kensington	Regner, J. A.	Evansville
McDavitt, Thos.	St. Paul			Reid, William	Deerwood
McDonald, H. N.	Minneapolis	Nannestad, J. R.	Albert Lea	Reineke, G. F.	New Ulm
McDonald, I. C.	Minneapolis	Nass, B. A.	Mabel	Reiter, H. W.	Shakopee
McDonald, D. W.	Minneapolis	Nelson, A.	Fertile	Rhines, D. C.	Caledonia
McEachran, A.	Minneapolis	Nelson, C. P.	Westbrook	Rice, T. D.	Pipestone
McEachern, W. A.	Sandstone	Nelson, J. C.	St. Paul	Richards, G. W.	Sanborn
McGaughey, H. F.	Winona	Nelson, L. A.	St. Paul	Richardson, W. E.	Slayton
McGaughey, J. B.	Winona	Nelson, N. A.	Dawson	Richardson, W. J.	Fairmont
McGuigan, Henry	Mazeppa	Neraal, P. O.	McIntosh	Ridgway, A. M.	Annandale
McGulre, C. J.	Minneiska	Neumann, W. H.	Lewiston	Riggs, C. E.	St. Paul
McIntyre, G. W.	St. Peter	Newhart, Horace	Minneapolis	Riley, E. A.	Willow River
McKee, C. S.	Minneapolis	Newman, G. A.	New London	Ringnell, C. J.	Minneapolis
McKenna, W. H.	Austin	Nicholson, Joseph	Brainerd	Rishmiller, J. H.	Minneapolis
McKeon, Jas.	Montgomery	Nickerson, B. S.	Glencoe	Risjord, J. N.	Fertile
McKev, T. F.	Albert Lea	Nickerson, M. L.	Minneapolis	Ritchie, A. F.	Duluth
McKinnon, J. J.	Wadena	Nippert, H. T.	St. Paul	Ritchie, H. P.	St. Paul
McKinnon, M.	Fosston	Nippert, L. A.	Minneapolis	Ritchie, Parks	St. Paul

Roadman, J. M.	Bovey	Spratt, C. J.	Minneapolis	Vinje, Syver	Hennig
Robbins, C. P.	Winona	Spratt, C. N.	Minneapolis	Vistaunet, P. L.	Thief River Falls
Roberts, Cora B.	Minneapolis	Stabo, Trond	Spring Grove	Vogel, J. H.	New Ulm
Roberts, L. M.	Little Falls	Staples, H. L.	Minneapolis	Vollmer, Jos.	Hutchinson
Roberts, Thos. S.	Minneapolis	Steen, A. H.	Cottage Grove	Von Berg, J. P.	Albert Lea
Robertson, J. B.	Cottonwood	Steinbach, John	Winona	Vrooman, F. E.	St. Francis
Robertson, J. W.	Litchfield	Stearle, A., Jr.	Rush City	Wakefield, Kee	Hutchinson
Robillard, W. H.	Fairbault	Stemsrud, A. A.	Dawson	Wakefield, Kee	Hutchinson
Robitshek, E. C.	Minneapolis	Stenberg, Oscar	Harris	Wakefield, Wm.	Lake Benton
Rochford, W. E.	Minneapolis	Stephan, E. L.	Hinckley	Walker, A. E.	Duluth
Rogers, A. C.	Fairbault	Sterner, O. W.	Cambridge	Walker, H.	Duluth
Rogers, C. E.	Montevideo	Steven, Geo.	Byron	Walsh, E. F.	St. Paul
Rogers, G. M. F.	Buffalo	Stevens, C. A.	Jasper	Wang, A. M.	Minneapolis
Rogers, H. W.	Montevideo	Stevens, F. A.	Lake Elmo	Wanous, E. Z.	Minneapolis
Rogers, Emma	Austin	Stevenson, Geo. A.	Albert Lea	Warham, Thos. T.	Minneapolis
Rogers, F. D.	St. Paul	Stewart, Allan B.	Owatonna	Warne, E. G.	St. Paul
Rogers, J. T.	St. Paul	Stewart, C. A.	Duluth	Warner, E. F.	St. Paul
Rollins, F. H.	St. Charles	Stewart, D. A.	Winona	Warren, F. S.	Fairbault
Rood, D. C.	Hibbing	Stewart, J. Clark	Minneapolis	Watkins, S. O.	Carlton
Rose, F. M.	Fairbault	Stinchfield, A. W.	Rochester	Watson, Charles W.	Boyd
Rothenberg, J. C.	Springfield	Stocker, S. M.	Duluth	Watson, F. G.	Clarkfield
Rothrock, J. L.	St. Paul	Stoddard, A. G.	Fairfax	Watson, John	St. Louis Park
Rowe, W. H.	St. James	Stolpestad, H. L.	Lafayette	Watson, J. A.	Minneapolis
Roy, Philemon	St. Paul	Stone, W. T.	Park Rapids	Watson, N. M.	Red Lake Falls
Rumpf, W. H.	Fairbault	Storch, C. M.	Grand Rapids	Watson, T. R.	Zumbrota
Rutledge, J. W.	Minneapolis	Strathern, F. P.	St. Peter	Wattam, G. S.	Warren
Ryan, E. P.	Stillwater	Stratton, W. M.	Granite Falls	Way, O. F.	Clairmont
Salter, W. H.	Duluth	Straub, C. O.	Minneapolis	Webster, H. E.	Duluth
Satterlee, L. W.	Alexandria	Strech, E. D.	Duluth	Webster, I. D.	Mankato
Sawyer H. P.	Goodhue	Strickler, A. F.	Sleepy Eye	Wedge, A. C.	Albert Lea
Schaleben, H. O.	Thief River Falls	Strickler, O. C.	New Ulm	Weeks, L. C.	Detroit
Schefcik, J. F.	Minneapolis	Strout, E. S.	Minneapolis	Weiser, F. R.	Windom
Schjelderup, N. H.	Minneapolis	Strout, G. E.	Winthrop	Weiser, G. B.	New Ulm
Schlesselman, J. T.	Good Thunder	Stuart, J. H.	Minneapolis	Wellcome, J. W. B.	Sleepy Eye
Schlick, A. T.	Duluth	Stumm, T. W.	St. Paul	Wellner, G. C.	Red Wing
Schmauss, F. L.	Mankato	Stuhr, H. C.	Argyle	Wells, E. E.	Stillwater
Schmidt, Karl H.	Minneapolis	Sukeforth, L. A.	Duluth	Werner, O. S.	Lindstrom
Schmitt, A. F.	Mankato	Sullivan, M.	Adrian	Westbrook, F. F.	Minneapolis
Schmitt, S. C.	Blue Earth City	Swartz, W. J.	Forest Lake	Weston, C. G.	Minneapolis
Schneider, H. A.	Jordan	Swartwood, F. A.	Waseca	Weston, J. B.	Duluth
Schoch, J. L.	New Ulm	Sweeney, Arthur	St. Paul	Weyrens, P. J.	Ivanhoe
Schoonmaker, E. C.	Perham	Sweetser, H. B.	Minneapolis	Wheaton, C. A.	St. Paul
Schottler, G. J.	Dexter	Sweitzer, S. E.	Minneapolis	Whetstone, Mary S.	Minneapolis
Schrader, J. S.	Springfield	Sweny, C. F.	St. Paul	White, J. B.	Montgomery
Schulze, A. G.	Carlton	Swenson, Charles	Braham	Whipple, C. D.	Minneapolis
Schuldt, F. C.	St. Paul	Talbot, Ada E.	Minneapolis	Whitacre, J. C.	St. Paul
Schultz, A. J.	Dundee	Taustrom, Ingeborg	Center City	Whitcomb, A. L.	St. Paul
Schultz, F. W.	Waltham	Taylor, A. C.	Duluth	Whitcomb, E. H.	St. Paul
Schulze, Geo.	Owatonna	Taylor, C. W.	Duluth	White, S. M.	Minneapolis
Schwyster, Arnold	St. Paul	Taylor, H. L.	St. Paul	Whiting, Arthur D.	St. Cloud
Schwyster, G.	Minneapolis	Taylor, M. J.	Janesville	Whiting, J. F.	Spencer Brook
Scofield, C. L.	Benson	Taylor, Wm. J.	Pipestone	Whitman, A. F.	St. Paul
Scott, J. W.	St. Charles	Tessler, M.	St. Paul	Whittemore, J. G.	Donnelly
Searles, S. S.	Lakefield	Thabes, J. A.	Brainerd	Whittemore, N. K.	Elk River
Seashore, D. E.	Duluth	Theissen, W. M.	Henderson	Whyte, J. J.	Bertha
Seashore, Gilbert	Minneapolis	Thimsen, N.	Hayfield	Wicherski, O. G.	New Ulm
Sedgwick, J. P.	Minneapolis	Thomas, Benj.	Chokio	Wiedow, Henry	Worthington
Senker, Geo. E.	St. Paul	Thomas, D. O.	Minneapolis	Wier, J. D.	Bearsley
Serkland, J. C.	Rothsay	Thomas, Geo. H.	Minneapolis	Wilcox, F. L.	Walker
Sewell, R. J.	Nashwauk	Thomas, O. F.	Lakeland	Wilcox, H. H.	Albert Lea
Shaleen, Arthur W.	Hallock	Thompson, Albert	St. James	Wilcox Van H.	Minneapolis
Shannon, E. A.	Buffalo	Thordarson, Th.	Minneota	Wilkinson, J. C.	Red Lake Falls
Shaw, A. W.	Duluth	Thorkelsen, Thorvald.	Minneapolis	Wilkinson, Stella	Duluth
Shelden, W. D.	Minneapolis	Thrane, M.	Madison	Wilkowski, C. W.	Fairbault
Sheppard, Fred.	Hutchinson	Tibbitts, J. I.	Wayzata	Williams, C.	St. Paul
Sheppard, F. E.	Hutchinson	Tilderquist, D. L.	Duluth	Williams, C. W.	Minneapolis
Sherping, O. Th.	Fergus Falls	Tingdale, A. C.	Minneapolis	Williams, H. L.	Minneapolis
Sherwood, Geo. E.	Kimball	Tinker, C. W.	Stewart	Williams, Jno.	Lake Crystal
Shimonek, Anton	St. Paul	Titus, J. H.	Sacred Heart	Williams, Robt.	Alden
Shipman, C. G.	Ely	Titus, W. S.	Mora	Williams, R. V.	Rushford
Shrader, E. E.	Watertown	Todd, F. C.	Minneapolis	Williams, U. G.	Minneapolis
Shrader, J. S.	Springfield	Todd, W. E.	Albert Lea	Wiseman, R. L.	Pine City
Simon, B. F.	St. Paul	Tofte, Josephine	Ruthton	Wilson, L. B.	Rochester
Simpson, Chas.	Minneapolis	Tomlinson, H. A.	St. Peter	Wilson, W.	Northfield
Simpson, J. D.	Minneapolis	Tower, J. B.	Topeka, Kas.	Wilson, W. F.	Lake City
Slagle, C. G.	Minneapolis	Towers, F. E.	Minneapolis	Wimer, T. H.	Marshall
Slipperr, H.	Fosston	Towers, Mary E.	Minneapolis	Wilterstine, H. H.	Rochester
Slocumb, J. A.	Plainview	Trace, O. C.	Little Falls	Wolner, O. H.	St. Cloud
Smersh, F. M.	Owatonna	Truax, W. E.	Breckenridge	Wood, D. F.	Hanska
Smith, C. A.	Minneapolis	Tufty, J. M. O.	Duluth	Wood, William S.	Blooming Prairie
Smith, D. D.	Mankato	Tuohv, E. L.	Duluth	Woodard, F. R.	Minneapolis
Smith, C. E.	St. Paul	Turnbull, R.	Fosston	Woodruff, C. N.	Chatfield
Smith, Frank D.	Oronoco	Tweedv. G. J.	Winona	Woods, E. A.	Clear Lake
Smith, H. O.	Shakopee	Tyrell, J. B.	Waterville	Woods, E. A.	Clear Lake
Smith, H. W.	Crookston	Ulrich Henry L.	Minneapolis	Woodworth, Elizabeth.	Minneapolis
Smith, M. B.	Lake Park	Urstad, O. H.	Kiester	Workman, H. M.	Tracy
Smith, P. A.	Fairbault	Van Cleve, S. H.	Minneapolis	Wright, C. D.	Minneapolis
Smith, S. D.	White Earth	Van Valkenburg, B. F.	Long Prairie	Wright, C. O.	Luverne
Sneve, Haldor	St. Paul	Valentine, W. H.	Tracy	Wright, F. R.	Minneapolis
Soderlind, A.	Minneapolis	Valin, H. D.	St. Peter	Zelen, Thos.	North Branch
Soderlund, O.	St. Paul	VanderHorek, M. P.	Minneapolis	Ziembeck, R. D.	Montevideo
Soper, John E.	Norwood	Vigen, J. G.	Fergus Falls		
Spalding, A. E.	Luverne				

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Bigelow, E. E.	Owatonna	Hewitt, C. N.	Red Wing	Murdock, A. J.	Minneapolis
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Cooley, C. O.	Madelia	James, J. H.	Mankato	Phillips, E.	Minneapolis
Cummings, D. S.	Waseca	Jones, Tabot	St. Paul	Rose, F. M.	Fairbault
Dampier, C. E.	Crookston	Kimball, H. H.	Minneapolis	Simpson, Charles	Minneapolis
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THE TREATMENT OF BURNS AND SKIN-GRAFTING*

BY HALDOR SNEVE, M. D.

ST. PAUL

There is perhaps no more frightful accident than a severe burn of large area. The intense suffering of the patient, and, in case of recovery, the hideous deformity left, render these accidents peculiarly distressing. In spite of all our pastes and powders, salves and solutions, our mortality in burns involving more than one-third of the body surface is nearly 100 per cent, and in many cases the agony of redressing these wounds is so great as to lead physician and patient alike to pray for a merciful termination by death. Surgeons have discarded many of the degrees of burn proposed by Dupuytren, and during the past twenty years have been accustomed to describe burns of three degrees: hyperemia of the skin, first degree; destruction of the epidermis shown by vesication, second degree; and destruction of the deeper tissues, third degree. As degrees are formulated for the purpose of exact description, and with regard to prognosis and treatment, I believe a better description would be to use four degrees as follows:

First degree, hyperemia of the skin.

Second degree, destruction of the epidermis shown by vesication of the skin.

Third degree, destruction of the skin.

Fourth degree, destruction of the deeper tissues, indicated by the formation of eschars.

My first paper was published July 1, 1905, in the Journal of the A. M. A. With the cases there described and up to Jan. 1, 1906, over one hundred cases have been treated by the method to be described below, with a reduction in mortal-

ity of from nearly 100 per cent to less than 40 per cent. The majority of these cases have been treated at the City and County Hospital, St. Paul, Minn., and I cannot sufficiently express my praise of the courage and courtesy of Dr. A. B. Ancker in giving the treatment a trial after my first four cases, and then making it the routine practice of his institution.

GENERAL CONSIDERATIONS

The causes of death from burns are, first, *shock*; second, *toxemia*, and, third, *exhaustion* from protracted healing.

Shock.—So much has been written upon the subject and so much awaits us that the last word cannot yet be said, but it seems as though we ought to be able, even now, to form a fairly definite opinion of the pathological conditions that confront us in shock, and base a rational therapy thereon. If we take into consideration the physiological experiments of hydrotherapy, in conjunction with numerous experiments on shock and especially those of Sonnenburg, Crile, and Kinnaman, the following propositions may be assumed: Mental and physical irritants either singly or conjointly may produce a *vasomotor paresis*, which results in the lowering of the blood pressure and the accumulation of the blood in the splanchnic veins, i.e., "the patient is bled into his own belly;" a *fall in body temperature* occurs, which is due to an interference with the heat center in the spinal cord, or perhaps to inhibition of function of the nerve-endings in the cold, anemic skin, which convey temperature impressions to the center, whereby heat production and radiation are controlled; the lack of blood in circula-

*Read before the Minnesota State Medical Association, June 1, 1905.

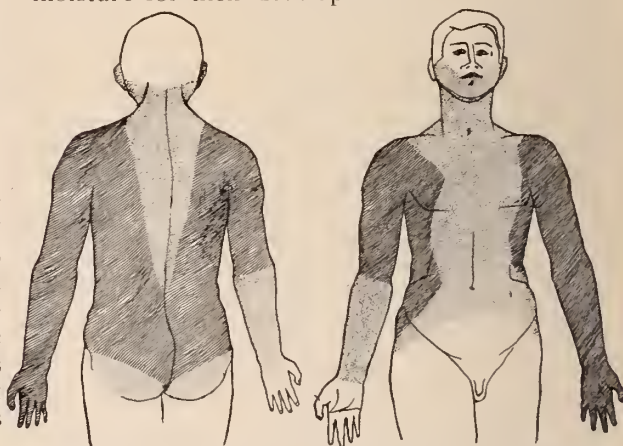
tion does not leave fluid enough for the heart to work upon, and, mechanically in great part, produces the weakness marked by a small, rapid, thready pulse. The brain torpor, faintness, the condensation of the transpiration on the skin (cold sweat), the intense pallor, the coldness of the extremities, the weakness of the heart, and the compressibility of the pulse, are signs which indicate anemia in these regions. (Dr. J. A. Quinn, of St. Paul, called my attention to an almost pathognomonic symptom of a fatal issue in shock after injury, which consists in a peculiar motor restlessness, the patient throwing his limbs from side to side, uttering "Oh! Oh my! Oh dear!" etc., at frequent intervals, with an inability to fix his attention for more than an instant.)

The fall in body temperature seems to me to be the most dangerous condition in shock, and this is borne out by Kinnaman's studies. This experimenter was able even to produce shock solely by lowering the temperature of animals. In some cases of drowning, Dr. Bailey of Lake City, Minn., was able to resuscitate patients apparently dead by using hot wet blankets and hot baths. The "gilded boy" and animals varnished over the skin died of lowering of the body temperature. (Winternitz.)

The first indication in therapy would be to use some agent to combat the fundamental disturbance, which is the vasomotor paresis. The only drug that can at present be recommended for this purpose is adrenalin cautiously administered, and I would warn against the use of whiskey, morphine, strychnia, digitalis, atropine, etc., because while they act as heart and circulatory stimulants when the body is in normal condition, in shock they are only poisons to the susceptible nervous system already struggling under a load threatening to overwhelm it. Far better for our purpose is the symptomatic treatment of the resultant condition. To assist nature drive the blood out from the abdomen I would give drinks and enemata of cold normal saline solution, apply cold to the belly, chafe the hands and feet, and apply local warmth to the extremities, especially to the nape of the neck. To counteract the fall in body temperature we can also use the hot bath or wrap the patient in hot blankets. Finally, to add more fluid to supply the heart with something to work on, use saline transfusion or hypodermoclysis.

Toxemia.—Occlusive dressings have been used from time immemorial in the treatment of burns, because, probably, the exclusion of the burned surface from the air relieved the pain. An added reason seemed to follow the discovery of the bacterial origin of suppuration and the presence of large numbers of germs in the air, but surgery now has discarded the use of Lister's

spray, and few surgeons fear that colonies of germs will alight on the surface of a wound and infect the field of operation. It is rather hands, instruments, sutures, and the skin from which needles carry cocci deeper, to which scrupulous attention is paid. Ever since Krönlein and Volkmann's strife in the 70's was decided in favor of occlusive dressings as against the open method of treatment, we have been haunted by visions of the swarming enemies in the air ready to swoop down on us, and one of the first questions that occurs to the practitioner who sees a wound treated open to the air is, "How about infection?" In the first hours of a burn the areas are effectually sterilized by the heat, and when eschars separate, nature has granulations which protect against invasion, and drainage can easily be kept almost perfect. In burns of the second degree, the dry crusts formed by nature, perhaps assisted by some dusting powders, render the field impregnable to germs, which require heat and moisture for their development.



Figs 1 and 2.—The light stippling indicates a burn of the first degree; and the lines a burn of the second degree. There is, besides, a large area around the right axilla of the third degree. Recovery.

The sudden deaths that occur in the early period of a burn have been the subject of considerable study. Schultze and Werthheim, and Ponfick and Lesser explained them by alteration and destruction of red-blood corpuscles, but the examination of the blood in cases of burns by Hoppe-Seyler showed that this theory is untenable. Silberman thought that capillary thrombi formed of altered red corpuscles lodged in the vital organs producing areas of anemia followed by inflammation. Sonnenburg ascribes death to sudden overheating of the blood with subsequent cardiac palsy or to shock from vasomotor paresis, and apparently demonstrated the last experimentally. Anjello and Parascandola experimented with burned tissue injections into healthy animals, and concluded that toxic ptomaines are absorbed, which cause poisoning and death. Bardeen (Johns Hopkins Bulletin, April 1, 1897)

found cloudy swelling and degeneration of the glandular organs, especially in an examination of five small children dying from burns, and concludes also that death is due to a toxemia, indistinguishable from that which occurs in acute infections, but, curiously enough, he considers this the result of the high temperature. Von Dietrichs (Wien. med. Woch. Nov. 21, 1903) says that "the changes in the blood after burns are fully explained by the formation of hemolysins and hemo-agglutinins, and the formation of other cellular poisons."

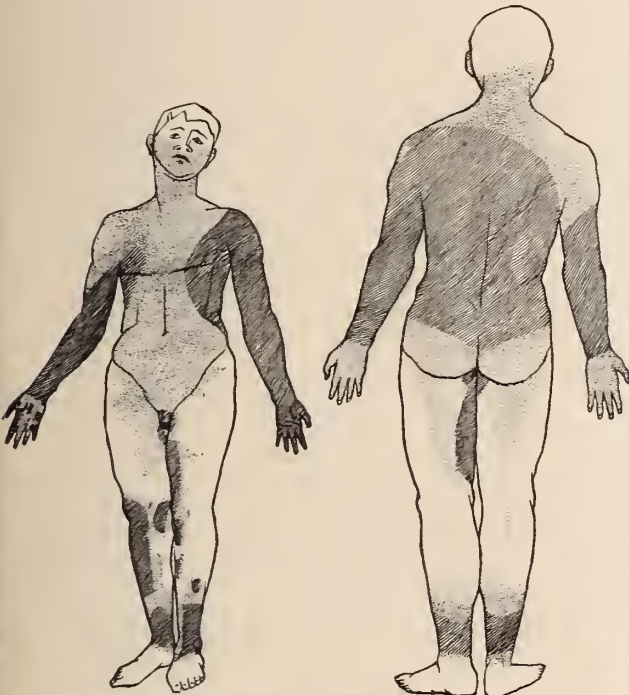
It must be apparent that any ptomaines formed from destroyed skin and other tissues are kept in contact with the raw surface held suspended in a warm solution, under the most favorable

utes the patient was delirious, the temperature and pulse both shot upward, and the urine had turned to a yellowish-green solution, which almost solidified on boiling.

Diffuse hemorrhages in the internal organs are almost characteristic of death from anthrax, or some equally violent toxic disease, such as farcy, malignant smallpox, or, indeed, any disease characterized by the rapid and free formation of toxins. Unfortunately, we were not allowed a single post-mortem in our cases that died, but the absence of tarry stools, collapse, and bloody diarrhea in our cases would point to the non-occurrence of extensive duodenal ulceration.

To avoid toxemia, then, we must not interfere with free perspiration. We must keep the secreting surfaces clean, and, to avoid infection, render the surface dry and impregnable to germs, and aid nature in forming adherent crusts, under which healing goes on so rapidly, as pointed out years ago by John Hunter. Of other emunctories, the kidneys and bowels can perhaps be best assisted by free flushing, and what is better than large quantities of normal saline solution? It is our firm conviction that at least 40 per cent of the deaths in the treatment of burns of large area is due to the use of occlusive dressings. There are but few physicians of the present day who believe that certain kinds of salves are actively valuable in hastening the healing process in wounds. It is hardly necessary to point out that healing depends upon certain forces in nature, upon nervous influence, the mechanism of which we can only theorize about, and upon the general condition of the patient. We do not deny that nitrate of silver, Peruvian balsam, and some other irritants sometimes seem to hasten cicatrization, but, at the best, they are only feeble aids to nature's forces.

Loss of Function of the Absent Skin Coverings.—The far-reaching importance of the skin and its contained organs is not fully appreciated I feel sure. Aside from its function as an organ of protection and excretion, the nerve-endings within it furnish the information by which not only the circulation but also the body temperature is properly maintained. Two pounds of sweat is the daily average excretion besides the CO₂ and possibly other noxious gases. The importance of maintaining in the highest state of functioning condition whatever of skin on the body that has escaped burning becomes manifest, and this is one of the reasons why the continuous full bath of Hebra is not the best treatment of burns, for the skin works best in its natural medium, which is air. Cold spongings and frictions are perhaps the best stimulants to skin function, and they should be frequently practiced in treating burned cases. To supply artificial heat to the



Figs 2 and 3.—Showing the extent of the scald. The light stippling indicates burns of the first degree, and the lines indicate burns of the second degree.

conditions possible for absorption, because the oily occlusive dressings prevent the profuse perspiration from carrying them off by evaporation. That ptomaines or other poisons are absorbed under these conditions is shown clearly by the burns treated. Whenever a crust formed over a granulating cavity which did not allow of the escape of the secretion, we could look for a rise in temperature or even albumin and casts in the urine; on the other hand, when our surfaces were kept clean and drainage was perfect, there was absence of these signs of intoxication. In my Case 1 the promptness of absorption can be shown by an acute poisoning which resulted from the application of a picric acid dressing. In twenty min-

body is another important indication, and a temperature as near the body heat as possible should be maintained constantly the first weeks of a severe burn.

Exhaustion.—Long - continued suppurative processes, or even serous discharges from granulating surfaces, lead to general emaciation, weakness, and, perhaps, amyloid or other changes in the vital organs. The best preventive is to graft, as soon as possible, the surfaces that have been burned to the third or fourth degree. Nourishing diet, as much exercise as possible, and supporting measures suggest themselves. Encourage your patients to get about in the room, and not remain in bed all the time.

SKIN-GRAFTING

In extensive granulating areas where skin-grafting was required we were confronted by the problem of an occlusive dressing, something we were anxious to avoid. We therefore determined to try the open-air method in this procedure also, and the first grafting made on an injured foot was entirely successful. Thiersch grafts were placed on the denuded surface, which had been prepared in the usual way, and then simply exposed to the air. Small blisters of tissue-paper thickness filled with a seropurulent exudate appeared on some of the grafts. These were opened, and the contents carefully expressed with gauze sponges. Drs. O'Brien and Brimhall then grafted a boy with an extensive burn according to the method of Reverdin, with excellent results. In this case the small grafts were simply planted on the granulations.

The next case that I grafted was a granulating area in the popliteal space of the left leg, about 6 by 9 inches, where the skin had been torn off by machinery in 1902. In this case the tops of the granulations were shaved off with a sharp knife, and the raised borders scraped with a sharp spoon. Not a blister raised in these Thiersch grafts, and the patient was discharged in two weeks, during which time he slept on his abdomen. The next case did not turn out so well. A wound on the right heel was grafted first with puppy skin and later with human skin from the patient. Both graftings were partially unsuccessful owing to an infection of bacillus pyocyaneus which existed on the leg. Dr. Wagner of Breslau calls attention to the fact that this particular infection is fatal to success in skin-grafting.

In St. Paul Drs. Harry O'Brien, Brimhall, Cook, Shimonek, Quinn, and others have used this method of skin-grafting with success. Owing to the fact that Dr. F. Brüning, assistant surgeon in the Lutheran Hospital at Freiburg, has published a short article in the *Centralbl. f. Chirurgie*, July 30, 1904, detailing his experience with the open-wound treatment in chronic granulating wounds and the excellent results attained by exposing grafted areas to the air, thereby antedating this part of our communication, it is unneces-



Fig. 5.—This photograph was taken on the twenty-fourth day after the accident. Most of the burns are healed. Recovery.

sary to describe our cases further, although the exposure of freshly grafted skin to the air was probably first practiced in St. Paul. In the future, with so successful and easy a method of treating grafted wounds, the immense areas especially resulting from burns should be grafted with the skin of the lower animals. There is so much fat in the skin of dogs that it does not so readily

of skin. It should also be remembered that the direct rays of the sun act powerfully as a destroyer of bacterial growth.

In some cases of burns the healing seems unduly protracted, and we have been in the habit of dismissing the subject with the explanation "that the general condition of the patient is bad," "the vital forces are run down," etc., but the be-



Fig. 6.—Showing extent of burns in Case 6. Recovery.

lend itself to grafting, but the skin under chicken wings, of guinea pigs, of rabbits, etc., ought to furnish material in plenty. Snipping off small bits of skin (Reverdin), and placing them on the granulating areas, will assist us in cases where Thiersch grafts cannot be obtained, and I think that this method will become popular again.

The best preparation for a skin-graft in my opinion is a daily sun bath with the open-air treatment of the wound, as the granulations become small, firm, and hearty-looking, and the borders, from which epidermization proceeds, take on new life and activity. When Thiersch grafts have been applied to the surface they will adhere firmly after six to eight hours. The serum that oozes out between and around them should be carefully wiped up with gauze sponges, and the contents of small vesicles that may arise under the epidermis should be expressed. Cleanliness must be observed, and if necessary a wire cage may be strapped over the part during the night in cases where the bed coverings are not tented with large cradles.

Following the suggestion of Dr. Bernard, we reduce excessive granulated growth by exposing the wounds to the direct rays of the sun every day, and this seems to work better than salicylic acid or nitrate of silver. Besides contracting the granulations and making them small, hard, and healthy-looking, it seems to hasten the growth

of x -ray burns, with their intense pains and increasing progressive ulceration, makes the query pertinent, Are we not dealing with a local condition? is there not present a local neuritis which interferes with the trophic function?

Some of the skin-graftings of very large areas, since the above was written, have not been as successful as we could have hoped. Dr. E. G. Sasse, of Lidgerwood, N. D., reported a case of a small boy burned over all of the back. He was grafted first according to the older methods under aseptic precautions, in a hospital, and the grafts were covered over with rubber strips and moist dressings. After ten days the grafts all disappeared. Some weeks later an attempt was made at leaving the grafts exposed to the air. All of them appeared to take nicely, but after two weeks they seemed to melt away gradually, and the greater part of them had disappeared. The little patient, however, left the hospital, and his parents kept his wound clean, and it healed gradually. Drs. Nippert and Rogers, of this city, grafted a burn involving the greater part of both lower limbs and perineum with scattered areas on the chest and right arm according to the Thiersch method, leaving the grafts open to the air. The grafts turned pink, and all of them apparently took beautifully. At the end of two weeks the grafts began to melt away on the legs so that the majority of them were lost. The remaining

grafts were successful. The explanation of this phenomenon is not very easy. It appears as though the grafts were eaten by hungry phagocytes, or as though the serous exudate between was irritant, causing the skin to exfoliate, as in eczema.

leave his skin-grafts exposed to the air, as mentioned above.

That "there is nothing new under the sun" receives confirmation again in this treatment of burns. Dr. W. P. Copeland, of Eufala, Ala., (Medical Record, May, 1887) describes two



Fig. 7.—Dr. Ohage's case. A girl twelve years old. Recovery.

OPEN AIR TREATMENT OF WOUNDS

For several years H. Wagner (Centralbl. f. Chir., Dec. 12, 1903) has treated chronic ulcers and granulating wounds by the open method with the happiest results. He says that occlusive dressings keep the edges of the wound macerated, swollen, and unhealthy so that often little or no progress towards healing is made. "In spite of antiseptic salves the secretions in the moist chamber form the most favorable nidus possible for bacterial development." "The danger of infection is practically *nil* with the open method of treatment." He has treated wounds on an individual with salves and the open method at the same time for comparison, and finds the open method vastly superior.

Oscar Bernard (Muench. med. Wochenschrift, Jan. 5, 1905) describes his method of treating chronic granulating wounds. He exposes unhealthy wounds to the sun's rays and to the air, aiming to secure some chemical effect from the first and a drying-out of the granulations by the latter. Although he claims to have practiced this method for years, and claims priority over Wagner of Breslau, it seems clear from his writings that he exposed granulating wounds to sun and air more as a method of treating the granulations than as a method of securing epidermization. Brüning at Freiburg was induced by Wagner to try the open method of treating wounds, and this led him one step further, namely, to

cases of minor burns, which had been treated for some time in the usual way, in which he removed the dressings, and exposed the wounds to the air, pasteboard boxes being placed over them to keep anything from touching the wounds.

Twelve years later, Dr. G. Archdall Reid (London Lancet, March, 1898) described his new modification of the open method, which consists in putting the dressings and bandages over a wire cage, and sponging the wounds three or more times daily with some mild antiseptic solution. Frequently water-proof is put over the cage to keep the drainage from drying or caking. The results were extremely gratifying to him, and he notes the absence of pain during treatment, and of keloid masses and thick cicatrices which continually break down afterwards. This cage method is about the same thing as Meyer's moist chamber for skin-grafts. Dr. Reid calls attention to the speedy healing of wounds licked daily by dogs and cats.

SUMMARY

When first seen, burns and more particularly scalds are apt to prove deceptive as regards their degree, and it is wise to withhold prognosis in the beginning. Whenever occlusive dressings are kept on, even for 48 hours, I am confident that these will frequently convert a first into a second, and a second into a third, degree burn through confinement of the perspiration and maceration of impaired tissue.

One of the remarkable things in this experience with burns is the small amount of pain suffered by the patients, and the short duration of the same when the wounds are left exposed to the air. Severe pain, when not obscured by shock, lasts only from six to twelve hours, and I think it is better controlled by hypodermics of morphine than by any other measure. I would urge that as little morphine as possible be given. It should not be given when shock is already developed.

Another astonishing feature is the character of the cicatrices after healing. In burns of the second degree the skin is reproduced so well that only a white color marks the scar. Third degree burns result in smooth, flexible, skin-like scars. Two factors probably account for this: First, the tops of granulations which grow into the meshes of the dressings are not torn off day by day, forming scar ridges throughout the substance of the scar, which firmly anchor the skin covering and probably interfere with its nutrition; and, second, nature seems better able to control the growth of the firm, small, healthy granula-



Fig. 8.—Showing the crades

tions which result from exposure to the air,—a marked contrast to the large flabby efflorescent masses seemingly growing without direction in the moist chambers of an occlusive dressing. The length of time for skin to cover a wound, judging from Bernard's, Wagner, and my own observation, is shortened about two-thirds as compared with the time required under occlusive dressings. Wagner estimates that a normal granulating surface the size of a small saucer can be healed over in eight to ten days.

First, treat the shock as indicated above.

Second, control the pain as necessary, and keep everything from contact with the burned areas.

Third, keep the patient surgically clean. Ordinary surgical principles govern here as elsewhere. Bichloride, carbolic acid, and other strong antiseptics to the wounds, are to be avoided when possible, because they are such powerful cell-poisons that toxic effects, both general and local,

are to be feared, and the delicate covering of granulations will not stand escharotic action without interfering with the production of smooth, flexible scars.

Fourth, give frequent cold sponge baths to the sound skin with friction, and keep the room temperature high. In private practice where conditions are different, put barrel-stave cradles in the bed and cover these so that the patient lies in a tent. In burns of small area a little cradle can be strapped on at night, and during the day simply exposed to the air.

Fifth, cut away all blisters, cleanse with normal salt solution, dry thoroughly and dust all second degree burns with stearate of zinc, carefully wiping away serous exudate until dry, brown, adherent crusts are formed. In burns of third degree nature will exude a serum which hardens and forms a tough transparent-like membrane. If this is left on it dries and cracks, and forms large scabs. The indication here is to remove these crusts so that the secretion underneath will not form little lakes, which may easily suppurate and from which absorption may occur. This can be accomplished by either removal with sponges and salt solution or by putting the patient into a tub of normal salt solution every day and soaking the crusts off. This must be kept up until the granulations are ready for skin-grafting or until healing occurs without it. Do not powder these burns.

Sixth, to maintain and preserve function, body and limbs should be exercised as much as possible. The eschars of burns to fourth degree should be removed when nature so indicates, and amputation performed when needed.

It is often said by physicians that this treatment may be all right in hospitals, but in private practice the people will not allow you to treat a patient without occlusive dressings. This is childish, because if the open method is the proper treatment of burns it must be used in private practice as well as in other places, and if it be true that this treatment will lessen pain, reduce mortality 60 per cent, and prevent the formation of those hideous cicatrices and keloid scars, certainly no theoretical considerations should prevail against it.

DISCUSSION

DR. H. J. O'BRIEN (St. Paul): It has been my good fortune to see a large number of cases treated by Dr. Sneve. Whenever I get "up a stump" in cases of burns I go to him and ask him what to do next. So far as his method is concerned, it is so plain, scientific, and practical that it appears like wasting time to discuss it. One who has had experience in the treatment of scalds and skin-grafting cannot do anything but endorse his treatment in every detail. Those of us who have not had experience in that way of treating such injuries should adopt it. We of the medical profession are a queer

lot; we sit here year after year and listen to papers of merit, but they seem to make no impression on us, and we go home and seemingly forget all about them, and so perhaps a week after going home this year some accident may occur, some poor fellow may be terribly burned, will we treat him in the same old way, or will we wake up and adopt Dr. Sneve's newer and better method? Are we afraid to do anything which we hear recommended together with facts and figures proving its worth, just because it has not the stamp of "old" upon it? Will we continue to put all kinds of dressing on burns and wounds so that if the unfortunate patient does not die of primary shock he is pretty sure to die eventually of either repeated shock or sepsis because of our occlusive dressing?

All of us who have treated burns know the abominable pain that accompanies the treatment of these wounds. In this, as in some other matters, we should be strong, and not listen to the lay objections to or criticisms of this treatment. We can and we should demonstrate that this is the proper treatment, no matter if Mother Jones or somebody else treated a granddaughter by the older methods, and she got well, not because of the treatment, but in spite of it. We should treat our cases in the way that has been advocated here to-day. The patient who is burned and where death does not take place in forty-eight hours from primary shock, if treated according to Dr. Sneve's method, commonly recovers, because he is not subjected to repeated shock resulting from frequent dressing. He does not have septicemia from lack of cleanliness, because no occlusive dressings are used and the parts are kept sweet and clean with salt solution. Dr. Sneve is one of the men in St. Paul who has had large experience with burns and scalds because of his relations with railroads, and his paper proves he has taken splendid and life-saving advantage of his opportunities.

This treatment can be applied to children. I have had children not over three years of age who have had large surfaces of the body burned and were treated by this method. I had one case of a child where the whole back was burned—a child two and a half or three years old. She was anesthetized to remove the bandage applied before I saw her. She was then put to bed, and when she woke up she rolled over on her stomach of her own accord, and never changed that position until the wound was healed. She never cried after the removal of bandages while in the hospital. I never saw burned and scalded children treated with comparative comfort before Dr. Sneve's method was introduced into the hospitals of this city.

DR. A. B. ANCKER (St. Paul): I feel that we have listened to a great story admirably told, and the best part of it is, it is a statement of fact. Although it has been my good fortune, looking at it from a professional point of view, to have seen cared for a vast number of burns, I feel that it would be a presumption on my part to attempt to say anything to add to the practical educational value of this paper. The large majority of burns and accidents that occur within the limits of this city are cared for in the municipal hospital, with which it has been my good fortune to be connected some twenty odd years, and mournfully do I recall the days when we applied nothing except what Dr. Sneve has called the "greased" method. How well do I remember the gallons of oil we used, and the large quantities of absorbent cotton; and what were the results? I am almost ashamed to tell you. The results radically changed when our good friend Dr. Sneve came to

us, and suggested the treatment that we have since adopted. Instead of having a great mortality, to lose a patient now by burns is rather an exception. That is what that method has been doing for us.

I wish it were in my power to add, if it were necessary, to this paper, but it is unnecessary. I simply hope it will be accepted as true, and that in the next burn you may encounter you will use this method of treatment. (Applause.)

DR. C. N. SPRATT (Minneapolis): I do not want to let this opportunity go by and not say anything about the use of silver foil. I think this has been a most excellent paper, but we can do what he has been trying to do with ordinary silver foil. You can put it on with no pain at all. You can put on several layers, and it will keep dry. You can put the dressing over that, and it will not stick.

The treatment with oil is an antedeluvian method. I have had experience in the use of silver foil, and know its value.

DR. L. F. SCHMAUSS (Mankato): I wish to congratulate Dr. Sneve for bringing this subject before us. I agree that "no dressing" (the open method) is superior to a poor dressing, the custom of putting on oils and powders, etc., under a dry covering (dressing). But there are several things regarding which I think a wrong impression went out, for instance the assertion or belief that every applied dressing to burns means retention of secretions, decomposition, increased suppuration, and absorption, and adherence of the dressing with resulting suffering every time the dressing has to be changed. This is not a fact. I have not had any experience with the open method, still I do not believe that it will yield better results than the treatment we followed at the Cook County Hospital, Chicago, where we had a good many cases. After cleansing the surface involved a moist antiseptic dressing was applied. This was not allowed to become dry, and hence there was no trouble in removing it under irrigation. It will not stick like a dry dressing. Either solutions of boric, picric, or carbolic acid or of aluminum acetate in proper strengths may be employed. Such a dressing will do no harm. There will be no retention of secretions, and hence very little or no absorption. What we want in burns is a clean, granulating wound (surface) as soon as possible, and nothing will accomplish this better than a properly applied moist antiseptic dressing. After that the surface can be treated with an ointment of bismuth subgallate, stearate of zinc, etc., which will promote healing and prevent the dressing from adhering. A burn treated on this principle will heal promptly, without suppuration, without extension of the injury, without crust formation, and with the least formation of scars and deformity.

In regard to the condition of shock: the author warned against the use of morphine. If the shock is due to pain I should use morphine to prevent any further development. It is then our best agent.

DR. C. H. CHRISTENSON (Starbuck): Our forefathers were taught to use all kinds of treatment. We have since come to our senses, and have made up our minds that the best thing to do is to watch nature to see what she is doing, and we have come to the conclusion that the best thing to do is to leave her alone as much as possible; that is what we are coming to now. For the last century, and indeed, as far back as history goes, the medical profession has been trying to oppose nature in nearly every conceivable form. We have been trying to oppose any treatment by nature, and the truth, as

I see it now and as I learned some years ago, shows me that it is best to leave these things alone and depend upon nature for treatment. I find the same thing is true in surgery, and it was only a few years ago when the surgeon treated wounds with all kinds of antiseptics, but we find we get the best results where we leave them alone. In hemorrhages we apply all kinds of dressings to exclude air. All these dressings serve only to increase the hemorrhage, but when we expose the bleeding surface to the air the hemorrhage will stop of itself.

DR. F. W. DIMMITT (Red Wing): I recollect with sorrow two cases of burns with fatal termination which I treated according to the best method we knew at that time, and these cases had they been placed under Dr. Sneve's method of treatment would have recovered. It may take a little nerve to overrule the opposition in these cases, as Dr. Sneve has said, but I believe the next case I have I shall treat as nearly as possible as he has recommended, and if the family of the patient wants anything further done I shall tell them there is nothing further to do.

It has been a pleasure to me to listen to this paper. It is worth a trip up here, and I shall certainly adopt the method unless in the meantime I find something superior to it. (Applause.)

DR. HALDOR SNEVE (Essayist): I want to thank the members for the very kind reception given my paper. I regret that I was unable to make myself understood to Drs. Spratt and (Schmauss or Barber), understood to Drs. Spratt and Schmauss. My paper was concerned with the abolition of occlusion. I think that, if you have a man scalded all over and you then cover him with silver foil, the chances are that he will soon see the golden streets. (Laughter.) We learned many years ago that gild-

ing a person was speedily fatal, even with a sound skin.

As far as the use of moist dressings is concerned, the doctor will pardon me, I am sure, if I repeat that, in spite of all sorts of soaking, their removal causes pain and bleeding. The first case I mentioned was treated with moist dressings for a long time, but those very moist dressings brought him rapidly to the Styx.

The treatment is not to do nothing; but is to keep the patient surgically clean, and allow nature to do the rest. We should observe what nature wants to do, and that is what we are to assist her in doing. We have been warned that germs and bacteria would swoop down on these raw surfaces, and infect the patient and kill him with blood poisoning, but we are getting away from that. You have to keep the temperature of the room up, and allow the patient to sleep in such a manner that nothing will touch the burned surface, and this will tax your ingenuity. You will have to use all your aseptic knowledge in keeping the wounds clean.

Dr. O'Brien has treated many fresh wounds after operation by leaving them exposed to the air and allowing nature to put her crusted glue over the cuts, and I would like to have him tell us what his results are?

DR. O'BRIEN: Elaborating Dr. Sneve's methods, I have applied the open treatment to all clean wounds, with no dressing of any kind from the time of recovery from the anesthetic. The wound is protected from the bed clothes by wire screen or ordinary barrel hoops. The wound seals itself quickly, and is not liable to infection. The open treatment is much more grateful to the patient and is as applicable in children (except infants) as in adults. (Applause.)

THE DIAGNOSIS AND TREATMENT OF CHRONIC MYOCARDITIS*

By JOHN W. BELL, M. D.

MINNEAPOLIS

Under the questionable title of chronic myocarditis I desire to call your attention to chronic myocardial disease, a grave form of cardiac disease, imperfectly understood and hence frequently overlooked. Much diversity of opinion and confusion exist as to the pathologic changes present in chronic myocarditis, or more correctly speaking, chronic myocardial degeneration.

In this paper I shall use the term *chronic myocarditis* in its restricted sense to include those morbid changes which manifest themselves clinically in the weakened myocardium, the result largely of fatty or fibroid changes in the heart muscle, occurring in persons at or beyond middle age, previously free from valvular disease. It is not my purpose to discuss the pathology or

etiology of chronic myocarditis, except briefly for the purpose of rendering more clear the diagnosis and treatment.

Pathology.—The microscope reveals a variety of pathologic metamorphoses, pointing to fatty or fibroid changes in the heart muscle, either circumscribed or diffuse in character. Chronic interstitial myocarditis may, and not infrequently does, represent a later reparative stage of acute myocarditis, but much more frequently it is secondary to conditions directly interfering with the nutrition of the heart muscle, such as gradual narrowing of the coronary arteries or their branches, the result of endarteritis, atheroma, arterial fibrosis, or the more sudden and complete occlusion of the vessel by an embolus or thrombus. Localized changes, fibroid

*Read before the Sioux Valley Medical Association Jan. 19, 1906.

or fatty in character, are most frequently found in the walls of the left ventricle posteriorly toward the apex, causing local weakness and thinning with pouching of the myocardium, aneurysmal in character.

Etiology.—Males suffer from myocardial weakness much more frequently than females. The pathologic changes in the myocardium are of slow and progressive development, the result of long-continued injurious influences. These injurious influences, which fret and embarrass the heart, may come from within or without the organism, or, in some cases, there may be a union of both. My observation leads me to believe that the long-continued, even moderate use of alcohol, especially when associated with the use of tobacco, is one of the most potent factors in the causation of chronic myocarditis as we meet with it in American men. It is astonishing how promptly alcohol and tobacco aided by strong coffee (two or three times daily) will disturb the cardiac rhythm of the active, nervous man of affairs. In susceptible persons disturbance of cardiac rhythm and rate, associated with an irritable condition of the heart, is noticeable soon after the tobacco habit is formed. In the less susceptible its injurious effects are delayed until mid-life or beyond, and are observable in the form of more pronounced disturbance of rhythm, rate and force, associated with palpitation and precordial discomfort. Tobacco, by increasing the rate and disturbing the rhythm, thereby increasing the labor, as well as perhaps interfering with the perfect nutrition of the heart muscle, leads gradually to a degenerative change, and alcohol acts even more promptly in producing sclerotic changes. Gout, or the gouty diathesis, by paving the way for early stiffening of the arteries, is often visible in the background as a causative factor. Syphilis, like gout, is often responsible for myocardial disease, especially fibroid changes. Among the more frequent causes may be enumerated coronary disease, general arterial fibrosis, chronic renal disease, endocarditis and pericarditis, anemia, phosphorus, etc. Krehl calls attention to the well known fact that the central nervous system does influence the heart unfavorably through psychic influences, both as to rhythm and strength, but he questions the possibility of gross or microscopic lesions of the brain, influencing the heart unfavorably.

Symptomatology.—Chronic myocarditis is insidious in its onset, latent in its evolution, and erratic in its clinical course. The rational symptoms of myocardial insufficiency, at first are usually vague and inconstant; and this is true not alone of a series of cases, but of the same case at different times. Death may occur suddenly without evident symptoms or physical signs.

Breathlessness, amounting to dyspnea on exertion, is one of the earliest and most constant symptoms. Slight vertigo, headache, precordial distress, palpitation, and, later, attacks of angina are among the more common symptoms. The pulse becomes irregular in rate, rhythm, and force; perchance intermittent. Slight overwork or worry precipitates an attack of palpitation. Later, dyspnea becomes more pronounced and constant, with attacks of severe cardiac asthma, especially at night. In other cases the breathing is of the Cheyne-Stokes type, often accompanied by pulmonary congestion, edema, and, later, hydrothorax; the latter often before evidence of fluid is noticeable elsewhere. In other cases precordial pain occurs, and, later, attacks of true angina, especially if extensive coronary disease is present. In still other cases the patient may manifest muscular twitching or Stokes-Adams quartet of symptoms. For clinical purposes we may group cases of chronic myocarditis into two groups.

1. Those in which sudden death occurs, with or without previous symptoms of cardiac disease, due to advanced coronary disease. Sclerosis of the coronary arteries invariably exists, in some instances, with recent thrombosis; in others with extensive fibroid disease; and in others, again, with fatty degeneration. In a small percentage of cases the only evidence of cardiac disease is a sudden, often fatal, attack of angina, possibly preceded by a few hours of slight precordial discomfort. Some two years since, a man, previously in good health, aged 58, of good habits, free from syphilis, alcoholism, or gout, consulted me during my morning office hour, complaining of gastric discomfort and slight precordial constriction; heart normal in size and position, pulse regular but slow. Eight hours later death occurred during an attack of angina. While no post-mortem could be secured in this case, I have no question as to the existence of coronary disease.

2. A much larger group of cases, characterized by symptoms indicative of more gradual development of myocardial weakness. We are all more or less familiar with the following clinical picture, illustrative of this form of myocardial disease. An active business man, at or beyond middle life, of sedentary habits, a free user of tobacco, a daily moderate user of alcohol, and a generous liver, begins to suffer from breathlessness on the slightest extra exertion, also from precordial discomfort at intervals, especially if effort follows a full meal. Excitement, overwork, or worry precipitates palpitation. He becomes painfully conscious of the presence of a heart, and consults his physician, who finds a pulse usually irregular in rate, rhythm, force, or tension, often intermittent. A physical exam-

ination of the heart and vessels reveals a weak, diffused impulse in the nipple line, arteries unchanged or slightly stiff. On careful percussion, the deep cardiac dulness is found slightly increased. On auscultation the heart sounds may be practically normal, but as a rule the first sound is short, feeble and often reduplicated with variable accentuation of aortic second sound, and occasional reduplication. In the more advanced cases, presenting evidence of cardiac dilatation and valvular incompetency, a soft, blowing, systolic murmur is heard over the mitral area. Unless the true condition is promptly recognized, and counteracted by judicious treatment, we see the shortness of breath, precordial discomfort, and other symptoms of myocardial weakness increase from month to month, soon removing the once active man of affairs from his sphere of usefulness.

Diagnosis.—Chronic myocarditis gives rise to no pathognomonic sign, consequently, in the early detection of the disease, much depends on the judgment and experience of the clinician. He should keep constantly before him the fact that the vast majority of persons who begin to manifest signs of cardiovascular disease after mid-life suffer from myocardial disease, rather than valvular. In the beginning of every suspected case of myocardial disease a complete history should be taken, especially as to age, family tendencies, habits, and previous diseases. The urine should be carefully investigated for evidence of renal disease. The diagnosis is based largely on the age, history, state of the vessels, and symptoms, rather than on evidence of physical changes in the heart. We should especially avoid confusing it with valvular disease, on the one hand, or cardiac neuroses, on the other. In the majority of cases we must be content with a diagnosis of myocardial insufficiency. As to the exact nature of the myocardial changes present in a given case we can only speculate.

Treatment.—For the purpose of treatment we divide the clinical course of the disease into two periods or stages: (1) The period of progressive, and often slow development of myocardial weakness, accompanied by breathlessness, precordial distress, irregular pulse and occasional attacks of palpitation; and (2) the period of advanced myocardial weakness, accompanied by symptoms of pronounced cardiac insufficiency, such as constant precordial distress, dyspnea, cardiac asthma, Cheyne-Stokes breathing, frequent attacks of palpitation, marked irregularity of pulse, angina, tachycardia, bradycardia, Stokes-Adams quartet of symptoms, and, later, all the symptoms of venous and visceral engorgement.

In order to intelligently advise and treat an

individual suffering from chronic myocarditis, we must inquire carefully into his heredity, as well as his past and present condition; also have clearly in mind the etiologic factors responsible for the varied pathologic changes present in chronic myocarditis. The fat, flabby man of sedentary habits, suffering from fatty infiltration of the heart, must, of necessity, receive different advice and treatment from that indicated for the thin, spare, ill-nourished individual. Each individual case must be carefully studied as regards the existence of any constitutional vice, the exact state of the heart and arteries, the character of the pulse, and the digestive powers. Having then a clear conception of the patient's condition it should be carefully and frankly explained to him, unless there is some special reason to the contrary, when it should be explained to a friend or relative.

If called to treat a case in the first period or stage our initial endeavor should be to discover and remove every possible cause of cardiac irritation and embarrassment. Our second endeavor should be to so regulate the diet, exercise, and habits of the individual as to bring the general nutrition as well as that of the heart muscle up to the highest point, and there maintain it. For this purpose, in addition to hygienic and dietetic measures, general tonic treatment, consisting according to indications, of strychnin, arsenic, and iron, is indicated. The question of exercise must be carefully considered in relation to each individual case, and with special reference to the condition of the myocardium. In early cases where the pathologic changes are not far advanced, especially in obese persons, where fatty infiltration, rather than degeneration is the rule, graduated exercise is especially beneficial. However, in the large majority of cases of chronic myocarditis absolute rest in the recumbent position will be found necessary for a few weeks at least. The patient's habits should be carefully regulated; tobacco, alcohol, coffee, and tea should be interdicted. He should be urged to lead a quiet, orderly, and temperate life, as free from worry and excitement as is compatible with our modern civilization. The diet must be adapted to the wants and digestive powers of the system. All rich, bulky foods, especially those inclined to induce flatulence, should be excluded. The patient should be advised to sleep and eat regularly, eating three meals daily, composed of concentrated, non-fermentative, nutritious food, suited to the requirements of his special case. The midday meal should always be the principal one; no solid food between meals; little or no fluid with meals. Patients should be urged to sleep at least ten hours out of every twenty-four, with a midday rest of at least one or two hours following the midday meal, in order to minimize

the daily labor of the heart. The latter injunction should be rigidly followed during the remainder of the patient's life. In dealing with this condition it is attention to such little things as relate to eating, drinking, and doing which makes success possible. In the management of myocardial insufficiency we rely largely on rest, graduated exercise, massage, resisted movements, saline carbonated baths, tonics, and saline cathartics. In suitable cases saline baths of a proper temperature aid very materially in restoring myocardial tone.

Before instituting a course of baths the following conditions must be excluded: advanced arterial fibrosis, aneurysm, advanced cardiac insufficiency with dropsy, cases in which chronic bronchitis and asthma are well marked, also cases presenting fever. It is well to begin with a bath of ten minutes' duration, which should consist of fifty gallons of water at a temperature of 96 degrees F. gradually lowered to 90 degrees F. The water should contain one per cent of sodium chloride and one-tenth per cent of calcium chloride. The temperature of the second bath is gradually lowered to 88° F.; and thereafter all baths should be given at that temperature. The percentage of chlorides should be gradually increased.—sodium three per cent and calcium one per cent, and the bath prolonged to twenty minutes. As a rule carbonic acid should be added by the tenth day, preferably in the form of Triton salts. The baths, if beneficial, should render the pulse slower, fuller, and more regular; should improve the character of the impulse; and should decrease the area of deep cardiac dulness. The course of baths should extend over a period of five or six weeks, omitting the bath every fourth day. The principle underlying the baths, is that the percentage of salines be increased, the temperature lowered, and the duration lengthened. I consider it safer, and equally beneficial, to follow the plan suggested above, of gradually lowering the temperature of the water during the first few times until the patient becomes accustomed to the cool bath.

Unfortunately, these patients do not present themselves for treatment until pronounced weakening of the myocardium, as shown by marked visceral and venous congestion, has occurred, indicating the second or advanced stage of the disease. We are then confronted with the problem of medicating a weak and degenerated heart muscle in an individual having, in the majority of cases, by virtue of his age, suffered certain vascular, as well as extravascular, changes, causing increased intra-arterial and cardiac blood-pressure. In advanced cases absolute rest in bed must be enjoined for a variable period, the length of time depending entirely on the indications

present in that particular case. The question of the amount of rest indicated or required in a given case of myocardial insufficiency, demands the most careful consideration on the part of the physician in order to avert disaster.

The treatment of advanced cases of myocardial insufficiency, associated with pronounced venous and visceral engorgement, with evidence of beginning anascara, is wholly palliative, directed to the relief of symptoms and associated complications. For the reduction of the more or less constant high arterial tension present in many cases we rely mainly on the iodides and nitrites. I have found iodide of sodium, in from three to five grain doses, three or four times daily, the most satisfactory agent in dilating the arterioles, thus reducing intra-arterial pressure. The action of the iodides is much more prolonged than that of the nitrites, hence the iodides are to be preferred. Strychnin, digitalis, strophanthus, spartein, and caffein render most excellent service in giving tone to the weakened heart muscle, when combined with a vasodilator, like soda iodide, nitroglycerin, erythol, or sodium nitrite. I desire to emphasize the value of long-continued, very small doses of digitalis, combined with a vasodilator, in myocardial disease associated with arterial fibrosis or chronic renal disease. In case the stomach is irritable, the urine scanty, and the arterial tension low, it may be given by the rectum with good results. The morning saline, preferably magnesia sulphate, given one hour before breakfast, aided by an occasional bedtime dose of calomel, adds much to the comfort of the patient. In view of the intense suffering associated with angina pectoris, the attendant should instruct the nurse, in case of an attack, to immediately administer a generous dose of morphin and nitroglycerin subcutaneously; also promptly to use amyl nitrite by inhalation.

In the management of pronounced myocardial insufficiency, with its attendant evils, no method of medication has proved so efficient in my hands as that of subcutaneous medication, especially when the stomach is irritable. Digitoxin, strychnin, nitroglycerin, spartein, and caffein may be used according to indications, with prompt benefit. Unfortunately, the cardiopath suffering from pronounced myocardial insufficiency, in spite of all treatment, soon drifts into that unfortunate condition so clearly depicted by Adams in answer to the inquiry of a friend as to the condition of his bodily health,—“The old house is in bad repair, the doors creak, the windows rattle, and the foundation is fast crumbling away, but, saddest of all, the landlord absolutely refuses to make further repairs.”

THE TREATMENT OF BURNS*

By CHAS. T. GRANGER, M. D.

ROCHESTER, MINNESOTA

A burn may be defined as a high grade of inflammation, caused by the application of dry or moist heat to any portion of the integument or mucous surfaces.

Burns are classified in different ways, but, generally speaking, they may be divided into three classes, namely: simple congestion, vesication, and that of more or less disorganization of the tissues. The grade of inflammation is largely governed by the exciting agent: whether or not it has a capacity for the absorption of heat; the susceptibility of the part acted upon, and the length of time of contact. Solid substances, such as iron, brass-work, etc., and the fixed oils cause a much more profound impression than water and vapors.

The constitutional effect will depend upon the individual, one of a hardy, robust nature being more able to controvert shock than those of weaker frame.

The lesion of the first degree is that of simple scorching; of the second degree, it is characterized by erythematous patches, and is noted to contain bullæ filled with clear fluid. In the milder forms of the third degree, some of the cuticle besides the epiderm will be found destroyed.

In burns of the second degree there is constant, severe pain, but in the majority of cases the inflammatory signs rapidly disappear, the vesicles rupture, the injured epidermis is thrown off, and recovery is rapid and uneventful. It is injuries of this class which one usually observes in practice. If the chest or abdomen are involved, however, the matter presents a much more serious aspect.

In burns of the third degree it usually requires several weeks for the sloughs to separate. The extent of the injury can not well be determined until this ensues, and there is some danger at the time from the profuse hemorrhage which occasionally follows the detachment of the eschar. The deep, ulcerating surface which follows separation of the slough, is very slow in healing, and gives rise to prolonged and exhausting suppuration. The local effect of this class of burn results in great disfigurement and destruction of tissues, while the constitutional effect depresses the patient's vitality and often results in death.

Following severe burns there are three stages,

namely: prostration, reaction, and suppuration.

Pain is the most marked symptom of the first stage, and it lasts from 18 to 24 hours. It may be marked by a profound collapse, great excitement, or coma, and, sometimes in children, by convulsions, which is usually a symptom of grave import.

The stage of reaction in mild cases lasts for two or three days, but in severe burns of the third degree, does not ensue for two or three weeks or until the sloughs separate. The stage of suppuration may be complicated by exhaustion due to profuse discharge, by hectic fever, erysipelas, pyemia, septicemia, asthenic lung conditions, and occasionally ulcers of the duodenum.

In burns of the third degree death occasionally results before pain has appeared. Shock of the worst character, therefore, appears early. Early mortality is due to shock, while late mortality occurs during suppuration. According to Wilms, in the fatal cases 80 per cent of patients die between the fourth and twenty-fourth hours. Consequently, if a burned patient lives twenty-four hours the prospect for recovery is much better. The leucocyte count is an accurate index for prognosis. In the cases which have recovered, the leucocyte counts varied between 20,000 and 25,000. Of the fatal cases, all of whom died before two days from the time of accident, there was a leucocytosis from 36,000 to 55,000. There are apparently some contributory causes for death besides shock. The loss of blood plasma from the burnt surface, and the general intoxication, due to absorption of degenerative products from the burnt area, are productive of early mortality.

The treatment is varied. Anything and everything is applied to a burn, the popular domestic idea seeming to gravitate between the application of chewing tobacco and the family bread supply in a crude state; and some of the dressings applied by the good old family doctor are not much of an improvement.

The treatment should be directed to reaction from shock, quieting the restlessness, relieving the pain, and an endeavor to prevent coma. The patient should be kept warm, immediately dressed, and, in bad cases, subcutaneous saline infusion should be given promptly and continuously for several days.

*Read before the Olmsted County Medical Society

The old-fashioned carron oil has many advocates, and undoubtedly meets the indications at times. The immediate application of a saturated solution of sodium bicarbonate to burns of the first and second degree, will prevent pain, and ordinarily effect prompt healing.

Picric acid has been employed extensively, and is one of the best agents at our command. The solution is made by dissolving one and a half drams of picric acid in three ounces of alcohol, which is then diluted with two pints of distilled water, thus procuring a saturated solution. To apply it the burned area should be cleaned as thoroughly as possible with absorbent cotton soaked in the solution. Strips of sterilized gauze are then saturated with the solution, and applied so as to cover the injured surface. A thin layer of cotton is applied over this, and the whole covered with a few turns of a light bandage. This dressing soon dries, and may be left several days. It adheres closely to the applied surface, and in order to be removed it must be thoroughly moistened with the solution, or, what I much prefer, with a dilute solution of hydrogen dioxide. The picric acid seems to deaden the sense of pain, and as it coagulates albuminous exudations, it must, of necessity, limit suppuration. Some evidence has been adduced as to the poisonous effects of the picric acid, but, on the whole, it is perhaps coming into more universal use for

the treatment of burns than any other dressing.

During the past year I have had a number of severe burns to treat, and finally prepared a form of dressing which seems to meet the requirements very well. We cut a few pieces of gauze as large as are necessary to cover the burned area. The gauze is then spread with a thick layer of equal parts of lanolin and oxide of zinc ointment. The ointment is then covered with the waxed paper sold by instrument dealers. The gauze is backed up by a thin layer of absorbent cotton, and the dressing is applied with the waxed paper surface in contact with the burn. The whole is covered with a roller bandage. Patients affirm that this dressing has a remarkably cool and easy effect, which is kept up continuously. One of the advantages which this dressing affords, is the ease with which it may be removed without harm to the granulating tissue.

In the after-treatment limitation of deformity is often a problem to be faced. It may be necessary to apply splints because of the inherent tendency to contraction. When a joint is involved massage should be advised as soon as practicable, in order to prevent ankylosis. With all the measures that may be adopted, the loss of tissue may be so extensive that skin-grafting will be the only means with which we can hope to restore the integrity of the part involved.

TWO SPLINTERS OF STEEL REMOVED FROM THE INTERIOR OF THE EYE, WITH THE MAGNET

By WM. R. MURRAY, PH.D., M.D.

MINNEAPOLIS

The use of the electromagnet for the removal of pieces of steel or iron from the eye, has become so general that the removal of a foreign body in this manner arouses no particular interest, but as the case which I am about to report is the first which has occurred in my experience in which two separate pieces of steel entered the eye at the same time, and apparently through the same wound of entrance, and especially as I was unaware of the presence of the first piece until it was withdrawn by the magnet, I have deemed it worthy of publication, as illustrating the necessity of extreme care being exercised in our search for foreign bodies within the eye, and that we should bear in mind the possibility of there being more than one penetrating agent.

Patient, M. S., aged 29; blacksmith by occupation; injured Oct. 30, 1905, while removing a shoe from a horse, a piece of steel striking the right eye. The patient did not experience much pain at the time of the accident, and continued with his work until night. Two days later he consulted Dr. J. F. Pratt, who found a penetrating injury of the right eye, the wound of entrance being in the upper nasal quadrant of the cornea. There was an iritis present, the patient at that time complaining of considerable pain. The case was referred to me for the removal of the foreign body with the electromagnet.

Examination of the eye showed a wound of entrance in the upper nasal portion of the cornea, and immediately back of it a bulging

of the iris, as though a foreign body were embedded in the iris tissue. The point of the giant magnet was applied at the site of the corneal wound and directly over the foreign body, but I was unable to draw it out of the iris tissue. After "making" and "breaking" the current a number of times, a small splinter of steel appeared at the corneal wound and attached itself to the magnet point, and was removed. Believing that there still remained a piece of metal in the iris tissue, and being unable to dislodge it by applying the magnet point to the corneal surface, I made an incision at the upper corneoscleral margin and passed the tip of a hand magnet into the anterior chamber, and by bringing it into contact with the steel I was able to free the foreign body from the iris tissue and remove it through the corneal incision.

The wound healed quickly, and two weeks

later Dr. Pratt reported that the patient returned to work with 20-30 vision with a correcting lens.

My object in reporting this case is to call attention to the fact that there may be more than one foreign body within an eyeball, and I would also call attention, in this connection, to a point which has been referred to by other writers, namely, that a foreign body may be so firmly embedded in the tissues in the anterior segment of the eye that it cannot be dislodged with the giant magnet when applied to the surface of the eyeball. In this class of cases the hand magnet may possess advantages over the giant magnet by enabling us to introduce the tip of the instrument within the eyeball, and, by bringing it directly into contact with the foreign body, to free it from its attachments, and extract it with the least amount of traumatism.

DISEASE OF THE PANCREAS*

WITH DESCRIPTION OF A CLINICAL CASE

By J. A. LYG, M. D.

MINNEAPOLIS

A correct diagnosis of a disease of the pancreas seems worthy of publication, as the report of cases of diseases of this organ is as yet so rare that every one published will bring out some new data not yet known in the etiology and treatment of the diseases of this gland.

The diagnosis of disease of the pancreas is hardly ever made, except on the operating-board and more frequently post-mortem. I have had within the last year two cases. In the first one the diagnosis was made post-mortem. This case, which was brought to the hospital in a moribund condition precluding any effort at operative procedure, gave a history of dyspepsia, pain, and vomiting for sixteen years. In the second case, which I shall relate to-night, diagnosis was made after opening upon the abdomen.

Mrs. Anna B., Norwegian, aged 28 years, weight 160 lb., well developed; father and mother living and well, one brother died of tuberculosis.

History.—She was well up to spring of 1895, when she complained of feeling poorly, and had steady pain at the tip of the ensiform cartilages. This pain lasted all summer, and in the fall the patient started to vomit. Vomited after eating. Always felt best when stomach

was empty. The vomiting became gradually worse each year. Has never been free from vomiting for more than a day or two at a time except when she would starve herself. The pain later became localized in the right side at the border of the ninth rib in the mammillary line. The color of vomitus would vary from a yellow to a green. She would vomit her food the way it was ingested. The pain in the left side became noticeable and prominent in the fall of 1905. She has been troubled considerably with constipation. Never has been jaundiced.

In January of 1896 had an attack of typhoid fever for which I treated her; and in 1897 she had measles, with good recoveries from both. She was kicked in the left side (flank) by a horse in 1900, was unconscious for some time, but does not think symptoms have been any more marked since this accident. In 1902 she had an acute attack of eczema on both arms, which lasted for three months. Her main complaint, however, was vomiting after meals, pain in the abdomen across the umbilicus radiating to the back, and weakness.

She consulted me off and on for the vomiting when it became unendurable. Some years ago I suspected she had an ulcer of the stomach, and she was kept in bed for four or five

*Read before the Norwegian Medical Club, March 12, 1906.

weeks on restricted diet, and used lavage. She felt better for a while, but started to vomit shortly afterwards.

Last January she consulted me again, and said she was getting so bad she could not stand it any longer. Complained of severe pain in the abdomen across the umbilical region, radiating to the back. She vomited every day, and could not keep her food down. She was advised to go to the hospital, which she did.

Present Condition.—The first thing noticeable about the patient is a peculiar grayish color of the face; she is well nourished, and weighs 160 lb., with a good layer of panniculus adiposus; heart and lungs normal; pulse slow, ranging from 50-60; respiration 18; tongue heavily coated with a heavy white fur.

Across the abdomen at the level of the umbilicus is a tumor easily felt. It is from 12 to 15 cm. long and about 8 cm. wide. On the right side the contour resembles a kidney, is of a hard consistence, painful on palpation, and not movable. On the left side the tumor is not so easily felt. On having patient stand, the tumor can be more easily palpated, due to the tumor sinking down. The tumor starts from the region of the duodenum, and can be felt across the umbilical region, disappearing in the region of the spleen.

Urine.—Examination: sp. gr. 1035, acid, sugar and albumin absent, abundance of oxalates and triple phosphates. The amount of urine collected before the operation was from 420 to 500 gm. in 24 hours; chromaturia absent. Stools were of a light color; they were not examined for fat.

Blood.—Hemaglobin 90 per cent; no blood count was made.

As I did not feel certain about the diagnosis we got her permission for an exploratory incision. An incision was made 6 cm. from ensiform cartilage to the umbilicus in the middle line. On opening the abdomen, the tumor was found to be behind the peritoneum. This was opened, and the tumor brought into view. The tumor proved itself to be the pancreas considerably enlarged, of a nodular appearance; the nodules were hard, solid, varying in size from a filbert to a walnut, and of a bright-red color. These nodules extended through the whole section of the gland, and suggested an adenomatous condition. Cutting into the gland (for diagnosis) being out of the question, the incision was extended to the right for the purpose of exploring the gall-bladder and common duct. The gall-bladder was found slightly enlarged, but no obstruction could be felt either to the pancreatic, cystic, or common ducts. As opening and draining the gall-blad-

der was the only thing that suggested itself as a possible treatment for this state of affairs, this was done. The gall-bladder was opened, fastened to the peritoneum, and a drainage tube inserted.

The patient, who had vomited for ten years, including the fourteen days she was under observation at the hospital, ceased vomiting immediately after the operation; the pain and distress in the abdomen was likewise entirely relieved. The urine increased from the 400 cc. to 1,000 cc. in the 24 hours. The drainage was kept up for fourteen days when the fistula was permitted to close. The patient left the hospital four weeks after operation, feeling entirely well, and she is at present complaining only of constipation, but this is also getting better. The tumor has disappeared entirely and cannot now be palpated.

The question now arises, what was the nature of this nodular enlargement in the pancreas? It could not very well be an adenoma, as such a tumor could not disappear on draining the gall-bladder. Could it possibly be some form of chronic pancreatitis, possibly due to some infection from the duodenum after her attack of typhoid fever?

SUMMER DIARRHEA IN INFANCY.

George Thomas Myers declares that the only correct means of ever classifying summer diarrhea will be from bacteriological examinations of the stools. The infectious origin of this disease is the theory held by many authorities. Bad hygienic surroundings predispose to this disorder. The already weakened mucous membrane is inflamed by undigested food which acts as a foreign body. The most susceptible period in the child's life appears to be from the fourth to the twentieth month. Artificially fed infants are more frequently attacked than the breast fed. The writer believes that the greatest factor in the production of this disease is the feeding of infants upon cow's milk which has been brought from a distance in warm weather and kept in hot cans before being prepared for feedings. The symptoms of this disease generally abate in from a week to ten days. The milder cases are the more frequent. In respect to treatment the writer, among other suggestions, gives the following: A daily warm sponge bath should be given; the greatest care should be taken to keep the feeding utensils and the food absolutely clean; feedings should always be given warm, at a temperature of 100° F.; the napkins should be removed and disinfected as soon as soiled; the child should have plenty of fresh air and light clothing; diarrheal cases should be isolated.—*Medical Record*, June 2, 1906.

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STATE ASSOCIATION MEETING

The thirty-eighth annual meeting of the Minnesota State Medical Association was held in Minneapolis June 19th, 20th, and 21st. The House of Delegates met on the afternoon of the 19th, and transacted the usual routine business. The reports of the secretary, treasurer, and standing committees were read and received. The Council met on the 20th, and formulated a report which was read the following day at the general or open session of the House of Delegates.

The first real question which was brought up and vigorously discussed was the question of fees for life insurance examinations. A resolution looking toward a uniform fee system was adopted. The new scale calls for a fee of \$5 for ordinary examinations, \$10 for microscopic examinations, and \$3 for renewal certificates. The House of Delegates does not favor the fees proposed by the old-line companies that call for an ordinary examination fee \$3, neither is the fee for fraternal orders looked

upon with favor. How closely the new scale will be adhered to remains to be seen.

On Thursday morning the meeting was a spirited one in which the question of contract practice was fought out. The result of the vote was the elimination of that section of the by-laws wherein certain salaried men were exempt from the stigma of so-called contract practice. The section as it stood was unjust and unfair, and now that it is not a part of the by-laws, contract practice is thrown into the air, and the physicians who do a great deal of contract and lodge work for very little pay will rejoice exceedingly.

The committee on the establishment of an independent state medical journal reported adversely, and the House of Delegates promptly ratified the contract between the Council and the Northwestern Lancet.

The election of officers for the coming year was uneventful. Dr. H. A. Tomlinson, superintendent of the St. Peter State Hospital, was chosen president. He had already shown his fitness for the office by his professional attainments, his scientific interest in the various branches of medicine, his impartial rulings while temporarily in the chair, and his aloofness from office-seeking.

Dr. E. Y. Chilton, of Howard Lake, was elected first vice-president; Dr. F. W. Penhall, of Morton, second vice-president; and Dr. P. C. Pilon, of New Paynesville, third vice-president. Dr. Thos. McDavitt was unanimously elected secretary, and Dr. R. J. Hill was, as usual, the only candidate for treasurer.

Duluth was selected as the place of the next meeting, the third Tuesday in August, 1907. The time of meeting was changed for many reasons, chiefly to allow a sufficient time to elapse between the meetings of other societies when most of the members are tired of medical societies, and it was hoped that a larger attendance might be secured.

The social side of the meeting was strenuous. A reception was given on Wednesday evening followed by dancing. The reception committee consisted of President and Mrs. Charles H. Mayo, Mayor and Mrs. D. P. Jones, Mr. and Mrs. Frank Day, representing Governor and Mrs. Johnson, and a number of representa-

tive physicians and their wives. Thursday noon a luncheon was served at Donaldson's Tea-Rooms for one hundred women. In the afternoon between 250 and 300 of the members of the society with the visiting ladies were taken out to Lake Minnetonka by special trolley cars. A dinner was served at Tonka Bay Hotel followed by toasts and a ride on the lake and a return to the city by special train. In spite of the rain and cold the crowd was too great for the hotel to adequately handle.

THE SCIENTIFIC PROGRAM

The address of the president, Dr. Charles H. Mayo, on "Surgical Opportunities," was an agreeable departure from the usual paper. Dr. Mayo called attention to the lost opportunities of the internalist and surgeon, and pointed out the possible prevention of many terminal states and the saving of many valuable lives by early and prompt surgery. The view-point was not from the surgeon alone, but from the broad look into the future of the general practitioner.

The program was not long, but it filled the two day session completely, and every paper but one was read.

Many interesting topics, new and old, were discussed, and all will appear in the *Journal-Lancet*.

In many societies the program is over-full, and papers are read by title on account of the lack of time. A good presiding officer can materially aid in the presentation of papers by adhering to the time limit, and many papers could be made more interesting by condensation. The time has come for shorter and more pointed papers, for the mass of medical matter that is presented to the reader is appalling, and no one has the time to read all that is published.

SELF-CRITICISM

The meeting of the American Medical Association in Boston furnished much interesting matter for the daily papers. The proceedings were reported, an occasional paper appeared in full or in abstract, and the paragrapher had his comments ready, witty or

wise. Among the many short and spicy paragraphs appeared the following:

"A notable feature of the proceedings of the assembled doctors the past week was the frank and outspoken manner in which they pointed out and criticised their own shortcomings. This absence of smug self-complacency was something really refreshing, and well worthy of imitation in other professions."

At one of the section meetings this subject was injected into a discussion, and it was a sharp reminder of the old-fashioned experience meeting when men openly confessed their failures. If this is to be a regular feature at future meetings we shall learn that a frank report of unsuccessful operations and failures in diagnosis, as shown by autopsy findings, will clear the foggy atmosphere in medicine. We have too long looked wise when we were densely ignorant. We have been ashamed to confess our inability to scientifically treat disease states, and we are prone to make fine diagnoses when we ought to recognize the underlying fundamentals. In fact, we frequently overlook the main channels of disease while we chase a rainbow symptom.

Open confessions would do more for suffering humanity than the administration of drugs illogically applied. If physicians would study the normal individual and compare him with the abnormal, and attempt to get down to a simple rather than a complex basis, we should eventually accomplish something. We teach in a text-book style, and forget that our own carefully thought-out experiences would point a safe pathway for others. We scold and find fault with those who foist ready-made remedies upon us when we should study a few well known drugs that will meet most of our requirements. We are lame and blind, but we do not care, nor have we the courage, to admit it.

Those of us who have been in practice for many years should know a few things and know them thoroughly, but, like the rest of rushing humanity, we attempt to grasp more than we can carry.

The profession is improving and will continue to gain, and our success will be based upon the recognition of our failures and particularly if we learn not to make the same mistake twice in succession.

NEWS ITEMS

Dr. Geo. J. Hanley has located at Braham.

Dr. R. Gronerud has moved from Hector to Kennedy.

Dr. C. W. Ray has moved from Mountain Lake to Nicollet.

Dr. Martin Kranz has moved from Fairfax to Wells.

Dr. A. W. Hanson has moved from Emmons to Albert Lea.

Dr. J. R. Wilson, of Minneiska, died last month at the age of 74.

Dr. N. A. Biorn, of Ada, is doing post-graduate work in the East.

Dr. J. C. R. Charest has moved from Hillsboro, N. D., to Fargo.

Dr. E. E. Wands, of Hampton, Iowa, has moved to Lisbon, N. D.

Dr. P. L. Vistaunet has moved from Thief River Falls to Moorhead.

Dr. L. B. Prouty has moved from Bryant, S. D., to Wentworth, S. D.

Dr. W. F. McManus has moved from Ellendale, N. D., to Frederick, S. D.

Dr. A. J. Doty, of Colman, S. D., is doing post-graduate work in Chicago.

Dr. D. H. Brown has moved from Sisseton, S. D. to Camp News, Black Hills, S. D.

Dr. C. C. Walker will move from Currie to Lamberton where he formerly practiced.

Dr. T. J. O'Leary, of Wabasha, has a position in a hospital at West Superior, Wis.

The architect's plans for a new hospital building at Aberdeen have been accepted.

Dr. George A. Perkins, of Dickinson, N. D., is taking a post-graduate course at Harvard.

Dr. Winslow Chambers, prison physician at Stillwater, has located for practice at Owatonna.

Dr. W. L. Palmer, of Glenville, is doing post-graduate work in Bellevue Hospital, New York.

The plans for an addition to the Owatonna Hospital were approved last month, and bids asked for.

Dr. William H. Witherstine, of Rochester, was married on June 1 to Miss Ida Dahlem, of Joliet, Ill.

Dr. F. R. Hansen, of Lakefield, was married last month to Miss Helen Chapin, of Cannon Falls.

Dr. J. Fowler Avery, of Aitkin, has moved to Minneapolis, and has offices in the Auditorium Building.

Dr. O. L. Peterson, house physician of Bethesda Hospital, St. Paul, has begun practice at Lindstrom.

Dr. E. L. Perkins, of Sioux Falls, was married last month to Miss Sena M. Swenson, of Chaska, Minn.

Dr. G. E. Hoeper, a recent Chicago graduate, has located at Mountain Lake, succeeding Dr. C. W. Ray.

Dr. A. W. Day, of Deer Park, Wis., has become a member of the staff of the More Hospital at Eveleth.

Dr. L. E. Claydon, of Red Wing, is studying in Europe, and will visit the principal hospitals of the Continent.

Dr. Campbell Senseng, of Paris, Texas, has located in Valley City, N. D., and will be associated with Dr. Platon.

Dr. R. B. Stevenson, of Ellendale, N. D., will spend the summer in post-graduate work in New York City.

Dr. Paul E. Ashley, of the '06 class of the State University, has a position in the Adams Hospital, of Hibbing.

Dr. William Jacoby, of Vernon Center, died on May 31, in St. Joseph's Hospital at Mankato at the age of 68.

The Grand Forks District Medical Society has adopted the \$5.00 examining fee for old-line insurance companies.

Dr. F. M. Archibald has moved from Atwater, where he has practiced a number of years, to Thief River Falls.

Dr. W. J. Corry, of Hannah, N. D., is in Chicago engaged in special work, and may not return to general practice.

Dr. T. C. Baldwin has resigned from the staff of the Lenont Hospital, of Virginia, and will probably go to California.

Dr. H. M. H. Egan, of Hetland, S. D., has moved to Sioux Falls, S. D. Dr. Egan has practiced in Hetland for fourteen years.

The new hospital building to be constructed for the Oliver Iron Mining Co. at Coleraine will be, it is said, the finest on the range.

Dr. Fernando Roys has moved from Brainerd to Lake Preston, S. D., where he formerly practiced.

Dr. J. J. Deertz, a Hamline graduate, class of '02, has moved from Hecla, S. D., to Northville, in the same state.

Grand Forks, N. D., has raised \$15,000 toward the fund necessary to secure a hospital to be conducted by the Sisters of St. Joseph.

Dr. J. C. Jacobs, who has been connected with St. Barnabas Hospital, Minneapolis, for some months, has located for practice at Spicer.

Dr. J. M. Robinson, of Duluth, has returned after an absence of over a year spent abroad in preparing for eye, ear, nose, and throat work.

Dr. F. A. Kiehle, who has practiced at West Jordan, Utah, since graduating from the State University, in 1901, has moved to Portland, Oregon.

The Medical Department of Hamline graduated a class of 27 members last month. Dr. David Owen Thomas delivered the graduating address.

Dr. D. R. Campbell, a recent State University graduate, has located at Bismarck, N. D., and become associated with Drs. Quain and Ramstad.

Dr. G. M. F. Rogers was obliged to give up practice at Buffalo on account of his health. He is now located at 1703 Fourth St., S. E., Minneapolis.

Dr. J. H. Higgins, of Rockford, is doing post-graduate work in the Chicago Polyclinic. His practice is taken care of by Dr. Lynch, of St. Mary's Hospital.

The Northwestern Hospital of Owatonna graduated three nurses this year, as follows: Miss Inez Michelson, Miss Alice Lunstadt, and Miss Honora Brennan.

Dr. John T. Gerahty, who was reared in St. Paul and who graduated at Johns Hopkins, in 1903, has been appointed an associate professor in that institution.

Dr. Ambrose Hammerel, a 1905 graduate of the State University, now in the Fabiola Hospital, at Eveleth, has been tendered the position of prison physician at Stillwater.

Dr. Jay Durand, of Crookston, State University, 1905, has gone to Atlantic City, N. J. where he has one of the best openings ever offered a recent graduate of a western school.

Dr. A. C. Rogers, of Faribault, was elected Secretary of the American Association for the Study of the Feeble-Minded at the annual meeting of the association held last month at Glenwood, Iowa.

Dr. West J. Swartz, of Forest Lake, died in St. Luke's Hospital, St. Paul, last month. Dr. Swartz graduated from the State University in the class of 1900, and has practiced at Forest Lake since graduation.

An unfortunate accident occurred on the lake excursion given the members of the State Medical Association. The wife of Dr. Charles Hill, of Pine Island, and her companion fell through an open hatch-way on the lake boat. Mrs. Hill had her arm broken.

A meeting of the Crow River Valley Society was held at Benson, June 13th. Members were present from Hennepin, Meeker, Stearns, Kandiyohi, and Swift counties, and were entertained at dinner after the meeting by Drs. Daignault, Schofield, and Thorsen, of Benson.

Dr. Paul Gronnerud, of the Chicago Polyclinic, was the guest of the St. Louis County Society at its June meeting. His demonstration of some of the important landmarks and technics of surgery was interesting and helpful, and the members of the society felt that it was one of the best meetings they have ever had.

A unique association has been formed at Rochester, and is known as the International Surgical Club. It meets daily, in the afternoon, and elects a new president every Monday. It is composed of visitors to St. Mary's Hospital, and at its meetings the work done in the morning clinics is discussed. Dr. J. E. Crewe is the secretary and treasurer, and will undoubtedly hold office "during good behavior," or a long time. It is estimated the membership will increase about twenty-five a week.

FOR SALE

A good general practice of over \$3,500 annually in town of about 400 in Southwestern Minnesota; first-class farming country; nearest competition 14 miles. Practice goes to purchaser of office and business lots and office furniture with some appliances; all for \$1,500; \$1,000 cash, balance on time if desired. Selling because of health of family.—Address C., care of this paper.

PRACTICE FOR SALE.

Intending to study a specialty in Europe before re-locating in a larger city, I offer for sale my office equipment, instruments, drug stock, etc. (everything up-to-date necessary in the practice), in Southern Minnesota, city of 2,500 (rich farming country surrounding). Cash practice averages \$3,500 a year, and goes to purchaser of my outfit at inventory price, \$1,200, for quick cash sale. If you want to step into a good practice address "S.," care of this Journal.

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LIMITATIONS OF SURGERY IN DISEASES OF THE KIDNEYS*

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DES MOINES, IOWA

The small influence exerted by medicine on diseases of the kidneys and the extreme importance of the continuous functional activity of the organ, is the warrant for surgical interference in diseases in which the secretory structures are not so hopelessly involved in organic change as to exclude all chance of benefit from any means whatsoever. Disordered circulatory changes are often of a temporary character, and subside without treatment or by simple means. Degenerative changes involve blood vessels, parenchyma, or connective tissue; and it is unreasonable and contrary to experience to expect a cure of a permanent improvement by surgical means. In chronic interstitial nephritis, due to or associated with some form of infection, the conditions are quite different. It involves the ordinary phenomena of inflammation. The kidney is hyperemic and swollen, pus and albumin are found in the urine, and some granular casts are present. The pathologic findings differ in a most positive way from the degenerative changes found in the fibroid or contracted kidney, which includes so many cases of chronic Bright's disease associated with arteriosclerosis, either as a cause or effect. It seems probable that the kidney disease is an associated condition, and is coincident with arterial fibrosis. Fothergill, many years ago, wrote an interesting book on the influence of faulty elimination in producing vasomotor contraction, endarteritis, and peripheral resistance to the flow of blood and consequent

cardiac hypertrophy. The gist of his argument was impaired elimination of urea, toxic influence on vasomotor nerves, and secondary mechanical, arterial, and heart changes. However beautiful this explanation might be it was insufficient to satisfy scientific inquiry. If Fothergill's theory could be accepted the logic of early operative treatment of the primarily affected kidney would be established, for it would be reasonable to believe that dividing the capsule or incising the kidney would so influence the circulation and the nutrition of the organ as to bring about a cure in a large proportion of cases. But when it is considered that no such sequence of events occurs and that the kidney and vascular changes are coincident and associated with, and dependent on, obscure changes which can only be determined by pathologic chemistry, it is very plain that any surgery directed to the kidneys would fail of accomplishing any good. Fothergill did not forget to call attention to the theory of the liver having the important office of completing the complex metabolic process leading to the final product—urea—which is the most convenient form in which nitrogenous elements can be eliminated from the body by the kidneys.

Our better knowledge of pathology enables us to understand that instead of the kidneys being inflamed by the effort in eliminating imperfectly azotized bodies and the toxic and mechanical influences upon the vascular system that the kidney change is a part of a more general pathologic change in the arterial system of a degenerative character.

*Read before the Sioux Valley Medical Association, at Sioux City, Iowa, January 18, 1906.

In parenchymatous nephritis the changes are more distinctly secondary, and often result from infections or from toxins following infections. The kidneys are congested and swollen, the capsule becomes tense, the quantity of urine is lessened and contains albumin, and uremic symptoms appear. These secondary inflammations of the kidneys cannot, of course, be much influenced by either medical or surgical treatment, while the primary exciting cause is still active unless the toxemia is of such a character that a few days' more activity on the part of the kidneys can tide the patient over the danger point, as, for instance, in the nephritis of the puerperal state. In this malady certain complications in the balance between nutrition and waste, which have come about during the period of gestation, have brought disaster to the kidneys, in that these eliminating organs have been burdened with toxic agents, and have at last failed. The quantity of urine has become very small and heavily loaded with albumin. On post-mortem the kidneys are full of blood, the capsule tense, and the parenchyma softened. Realizing the approaching danger our efforts are actively directed to securing elimination through the various channels. While engaged in securing the escape of toxins by vicarious means to relieve the kidney, if the organs fail, however active the other avenues become, death is certain.

On theoretical grounds at least it would seem logical to assume that relief of tension by incising the capsule would be highly beneficial in improving the function of the kidneys in threatened anuria and uremia. It is, however, readily granted if improvement should follow such a procedure it might be merely a coincidence, especially in view of the fact that apparently hopeless cases have unexpectedly recovered under purely medical treatment, thus affording one more instance in which the absolute value of a procedure is made uncertain.

In acute parenchymatous nephritis of primary origin the certainty of recovery under medical treatment when the disease is discovered early and intelligent means are employed by the physician and nurse, places the disease, as a rule, outside the necessity of surgical treatment. In chronic degenerative parenchymatous nephritis the organic changes which have taken place when the case has come under observation, generally render surgical treatment useless. It, however, may be admitted that in some earlier cases nutritive conditions in the kidneys may be improved by decapsulation.

The whole question of operative treatment, as it appears to me, is based on how much improvement can be effected in the circulation and upon the nutrition of the kidneys in acute parenchy-

matous or chronic interstitial nephritis or chronic degenerative nephritis of whatever type. There is apparently no ground for the theory that an improvement in the circulation by an anastomosis as contemplated by the Talma operation for cirrhosis of the liver, can be expected. Experimental surgery has settled this point. The experiments of Herxheimer and Hall seem to be conclusive that "no evidence of a general anastomosis with the vessels of the surrounding tissues" takes place.

The only question which remains is whether or not dividing the capsule or incising the kidney will relieve tension, and thus relieve the kidneys from the danger of subsequent deterioration. It would seem logical to assume that in acute nephritis with rapidly diminishing secretion when a part of the pathologic condition is a passive hyperemia and high tension that dividing the capsule would be a therapeutic measure of great value. In my opinion if a state of anuria should supervene, this operation should be employed. In the form of acute inflammation of the kidneys, which are usually assigned to exposure, medical treatment, as before stated, will generally prove successful.

In chronic interstitial nephritis with pus and granular casts in the urine and lowered specific gravity, decapsulation or incision is strongly indicated. I have employed this treatment with the most gratifying results. In a former paper on this subject I called attention to this fact. Since writing the paper referred to I have had under observation a case which more fully illustrates the advantage of this treatment.

In illustration of the foregoing, I offer the following case, which seems to bear out some of the propositions considered.

Mrs.— was referred to me by a physician of unusual skill in diagnosis, who had given considerable attention to the kidneys in a scientific way, with the opinion that the right kidney should be removed for tuberculosis. She had some months before suffered from an attack of pneumonia and had not been well since, but had symptoms which are recognized generally as due to incompetent kidneys. The urine had a specific gravity of 1.010, some casts, pus, and tubercle germs, and a small amount of albumin. The case was not thought to be Bright's disease, but tuberculosis, and that the right kidney was the one affected. No cystoscopic or segregating examination had been made, but it was thought that the right kidney was enlarged and tender on pressure. There had at times been a slight and irregular rise of temperature.

The patient was kept under observation at the hospital for a week or ten days before we decided what to do. The evidence from palpation

was not sufficient to enable us to arrive at an opinion. The chemical and microscopic examination was added to that which had so frequently been made by her attending physician. The urine was now segregated repeatedly, and we made the constant observation that the urine from the right kidney contained the least pus and bacteria: i. e., the right kidney was the least affected, but was not entirely free from disease. Both urines contained casts, pus, and tubercular bacilli.

The results of the several examinations led me to doubt the apparent evidence that the disease was primarily a tuberculosis, but rather a chronic interstitial nephritis. So important was a careful consideration of the secretion of the kidneys that in addition to the careful examinations of the urine by her family physician, specimens were submitted to Professor Alberts of the State University, and frequently to Professor Smith of Drake. The reports constantly agreed. It was found that the quantity secreted in twenty-four hours was about sixty ounces, containing a small number of casts and a rather large amount of pus and tubercle bacilli. Just what significance could be given to the presence of tubercle bacilli I could not fully determine, but having confidence in the efficacy of incision or decapsulation in certain cases of chronic suppurative interstitial nephritis, I determined to explore and employ one or the other of these procedures. Accordingly the patient was placed under the influence of chloroform, and, assisted by Dr. Conkling, I exposed the left kidney, which was shown by segregation to be the most affected. We divided the capsule, and reflected it back and freely incised the kidney. The wound was partly closed, first placing an iodoform gauze drain. The patient was turned to the other side, and the right kidney decapsulated, and the wound closed with an iodoform gauze as in the first instance. The operation was rapidly done to minimize the length of anesthesia. Time had been taken to carefully palpate the kidneys, and the touch seemed to indicate an unusual tension. The patient reacted well. The right incision closed in a week, and the left in two weeks.

There was no material change in the urine for the first ten days, but after this time the pus began to decrease in quantity. Careful examinations were made by Professor Smith for the remaining six weeks she was under my care. The reports were made at the end of each week, and showed a steady decrease in pus, casts, and tubercle bacilli. After three weeks the tubercle bacilli were inconstant. One or two examinations would fail to reveal them, and the next time a colony would be found, and then they would be absent for a while. At the end of six weeks the urine was practically normal, although few pus cells were

found, and an occasional cast. At one time, about the fourth week, she had a rather severe headache, a slight rise in temperature, loss of appetite, and general malaise. This was attended by a marked increase in the amount of pus, but the symptoms subsided in a few days and did not return.

Previous to the operation she suffered constantly from what appeared to be a slight uremic toxemia. The symptoms were a more or less constant headache, an occasional dizzy attack, nervous irritability, nausea, and loss of appetite. Her attending physician had observed this, and had counseled her to live mainly on a milk diet. These symptoms had in the most part disappeared at the end of six weeks, and she was allowed a general diet. As the weather was warm at the end of three weeks after the operation, she was encouraged to exercise moderately out of doors, which she had not been able to do for several months. When she left the hospital she had gained several pounds in weight. Before summer closed she went to California, and a letter received recently informs me that she has fully regained her health. Both she and her husband are well educated people and of unusual intelligence, and understood perfectly the significance of all the symptoms, both general and urinary, and had her urine examined from time to time; and the letter informs me that it is normal in character and that the tubercle bacilli have never been found since she left the hospital.

The results were more than equal to my expectations, for while I felt that the disease was essentially a chronic interstitial nephritis and amendable to surgical treatment, I could not entirely free my mind from an apprehension that the tubercle bacilli signified an involvement which would prove fatal in the end. But I feel now that the improved nutrition in the kidneys which followed the operation increased the resistance of the organs to the extent of averting a general tuberculosis of the kidneys, and I am also convinced that tuberculosis was not the primary disease.

Swelling of the leg, associated with febrile disturbances, may be produced by hematogenous infection of a hematoma of the calf muscles. Such a condition may somewhat simulate osteomyelitis or other serious condition. It may be differentiated, however, by the location of the greatest tenderness and swelling and by a careful inquiry into the history. If no distinct traumatism is recalled the condition of the patient's arteries may nevertheless suggest the possibility of the occurrence of such a hematoma.—*American Journal of Surgery.*

SOME INDICATIONS FOR SURGICAL OPERATIONS DURING PREGNANCY*

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MINNEAPOLIS

Until quite recently when a surgeon opened an abdomen for some supposed lesion and found pregnancy to exist, nothing was done to relieve the patient of the complicating disease. The abdomen was closed as quickly as possible for fear of causing abortion or injury to the mother. We have learned that the pregnant state does not render women immune to appendicitis, fibroids, ovarian tumors, cysts, dermoids, etc. On the contrary, pregnant women are even more susceptible to some of these troubles, or, rather, the pregnant state often renders such a disease more serious.

Carstens has operated in the case of existing pregnancy twenty-one times, with five deaths, but he believes the mortality is less at the present time. The 21 cases were as follows: Appendicitis, 5; fibroids, 4; hernia, 1; abdominal hysterectomy, 1; ovariectomy, 3; vaginal hysterectomy, 3; miscellaneous, 4.

In this paper I shall consider certain abdominal and pelvic diseases which are especially interesting and which have a direct relation to the pregnant state.

APPENDICITIS

There is yet much for the individual practitioner to learn in regard to this disease. It is especially necessary that the obstetrician and general practitioner become more familiar with its various phases, complicating pregnancy. A great deal of blame in the past has been ascribed to the carelessness of the accoucheur, when he was not directly responsible for symptoms of sepsis following confinement. He has been accused of infecting his patient, or it has been laid at the door of the nurse. A great many lives, no doubt, have been sacrificed on account of the so-called puerperal infection, which, in truth, was a peritonitis due to a ruptured appendix. Many lives can be saved if all physicians will recognize the possibility of a latent appendicitis becoming active during the pregnant state or at the time of labor. The irritation of the growing uterus, or the force of labor pains, causes the liberation of pent-up microorganisms, which results in the infection of contiguous tissue, producing symptoms so closely re-

sembling those of puerperal fever that a mistake in the diagnosis can easily be made. The disastrous results due to this complication have been demonstrated by a number of writers of late years, but the average doctor is just beginning to become acquainted with this condition.

With the knowledge that a number of unscrupulous practitioners will take advantage of this new loophole to shield them from a more greivous mistake or unlawful practice, we are, nevertheless, obliged to call attention to this too much overlooked source of infection accompanying the pregnant state.

The majority of surgeons are of the opinion that we should apply the same rules of surgery to appendicitis in pregnant as in other women. In fact, it often becomes an urgent necessity to remove an unhealthy appendix as early in the pregnant state as is possible if we would preserve the life of the mother.

The dangers of a diseased appendix during a pregnant state are many; e. g., gangrene or rupture may occur and a peritonitis supervene; or a miscarriage frequently happens because of the pain. Rupture of the appendix and the consequent peritonitis especially, may cause uterine contractions. Some surgeons advise the termination of pregnancy when appendicitis is discovered. This I believe to be bad teaching, as there is little danger to the mother or child when a careful operation is performed. M. I. Rostovtzeff reports twelve cases of appendicitis occurring in pregnancy; four continued to term; two had abscesses opened; four aborted before death; and only two died of six operated upon for general peritonitis.

FIBROIDS

The statement that "a child-bearing woman does not grow fibroids" has been proven false. Such a tumor is frequently encountered by the obstetrician. Often these cases do not call a physician until severe pain is experienced, or enlargement that is not consistent with a normal pregnancy is present. Case 2 is a good example.

Pain is a great persuader and a blessing in disguise. It obliges women to secure the advice of a medical man who would not call one otherwise. We find perhaps one of four con-

*Read before the Hennepin County Medical Society, October 2, 1905.

ditions present upon examination of pregnant women with fibroids:

1. A fibroid of the body that is causing pain on account of degeneration or torsion of its pedicle.

2. A fibroid of the neck low down in the pelvis, causing pressure on the rectum or bladder.

3. A large tumor of the fundus so situated as to interfere with the continual enlargement of the uterus.

4. A possible inflammation in and around the fibroid, resulting in adhesions to the contiguous organs, which produces pain and pressure or occlusion of the bowel.

Some authors advise the early removal of all fibroids during the pregnant state. Certainly those causing pain, even though small, should be removed, as pain is frequently a pathognomonic sign of degeneration. This is amply illustrated in Case 4.

By an early operation the uterus is saved, often the child, and the mother's life is spared more frequently than when the expectant plan is followed. All fibroids, I am convinced, when discovered in women of the child-bearing age, should be removed, if possible, before the pregnant state. The probability of hemorrhage after childbirth, or the production of a mal-position of the child, the occasional degeneration and infection, the frequent complication of retained placenta, obstruction to the vaginal or uterine outlet, adhesions, pressure, pain, and abortion, are all arguments in favor of operations in the pregnant state.

It is necessary in some late cases to do a Cesarean section or a Porro's operation, when the growth is large and situated low. M. A. Tate analyzed 31 cases of intra-uterine fibroids complicating pregnancy. In 6 the tumor became gangrenous; in 10 labor was normal; in 4 labor was difficult; in 2 the child had to be destroyed; in 4 labor was premature; puerperal mania complicated 1 case; and there was retained placenta in 4 cases.

Reliable statistics, extending over twenty years, gives no foundation for the belief that abortion always follows operative procedure on the pregnant woman. According to Turner's statistics, between the years 1874 and 1890, there were 33 myomectomies during pregnancy, with a fetal mortality of 61 per cent, and a maternal mortality of 36 per cent. But between the years 1890 and 1900, there were 44 operations with only 21 per cent fetal, and 9 per cent maternal, mortality. The rate is much higher than at the present time.

OVARIAN TUMORS

Tumors of the ovary, more in particular the cystic growths, are frequently associated with

inflammation of the tubes, fibroids, or other diseased conditions of the pelvic organs. An operation for tumors of the ovary must take into consideration that possibility. Ovarian tumors are liable to obstruct the genital canal, or the pedicle may become twisted. Infection, pain, and pressure are apt to cause abortion. Should cystic growths remain intact until labor begins, a rupture of the limiting membrane is apt to occur from the forcible contractions of the abdominal muscles. When their contents have become septic, the danger of general peritonitis is extreme, indeed.

The cystic growths of the ovary often become infected because of the intimate relation of their enveloping membranes and the bowel or diseased tubes. Every surgeon is acquainted with the fact that there may exist in the same individual a number of cysts or a multilocular cyst with one or more compartments that have become infected while the remaining ones contain clear fluid.

When a pelvic abscess forms, it may be opened through the vagina with comparative safety in the early months of pregnancy, should the contents of the uterus not be expelled as the result. An abdominal operation performed after the subsidence of acute symptoms is often a more satisfactory procedure. A large cyst may produce pressure symptoms which results in a premature expulsion of the uterine contents.

An ovariectomy performed in the early months of pregnancy, with the avoidance of all unnecessary manipulation of the uterus, is followed by but little danger to the mother or child. To bring on labor because of the presence of ovarian tumor is, I believe, ill-advised surgery. The mortality of the expectant period was found by Remy to be 2.3 per cent for the mother and 3.9 per cent for the child, and when pregnancy has been terminated for ovarian tumor it was found by Dsirne to be 25 per cent in 135 cases. In ovariectomy performed under modern precautions, the mortality is estimated at 5.9 per cent by Dsirne, 8.4 per cent by Weiss, and 4.09 per cent by Vinay.

When double ovariectomy is performed, the mortality is somewhat increased. H. Heil, from a study of 5 cases of his own and 241 cases collected from literature, shows clearly several points of interest for the operative gynecologist. In his opinion pregnancy does not materially alter the prognosis for the mother. In 237 cases there were only five deaths, and in 20 per cent of the cases pregnancy was uninterrupted. Orgler reports only 10 per cent interruptions of pregnancy. Heil is of the opinion that as soon as the diagnosis of the ovarian tumor is made, it should be

removed. He believes that every pregnant woman who complains of abdominal pain or discomfort in the genital sphere, should be carefully examined, and when the diagnosis lies between an extra-uterine pregnancy or ovarian tumor they should be operated upon.

DERMOIDS.

A great many cases of dermoids complicating pregnancy have been reported as often as 1 to 135 of all ovarian tumors. In dermoids of the ovary complicating pregnancy serious symptoms are apt to arise, especially in tumors large enough to be recognized. They are even more dangerous than other cysts of the ovary because of their tendency toward malignant degeneration and liability of infection. The injury produced at the time of labor may cause a rupture and an infection of the abdomen. The resulting condition so simulates puerperal infection that a mistake in diagnosis has frequently been made. An operation to remove these growths is attended with few more risks than operations upon other ovarian tumors during the pregnant state.

CARCINOMA

When carcinoma of the cervix or of the body of the uterus complicates pregnancy there are hemorrhage, emaciation, anemia, the extension of the growth, and the presence of pain. The mother's health is so depleted that premature labor is likely to occur. In order to save the life of the mother a hysterectomy is often the only recourse. By an early operation we may at least prolong the life of the mother and lessen her suffering.

SALPINGITIS AND ADHESIONS

When once a woman contracts a salpingitis which results in adhesions of the uterus or adnexa, miscarriage is a common sequence in succeeding pregnancies. This may be due partly to a fixed condition of the uterus. Operations performed with the purpose of liberating that organ or removing the tubes, have occasionally been followed by a natural course of the gestation period, although the prognosis for the child is bad in any case.

OTHER OPERATIONS

There are a number of other conditions that should be attended to before the mother reaches the limit of the gestation period. Vesicovaginal and rectovaginal fistulæ, and abscess of the vulvovaginal glands, tumors of rectum and vagina are perhaps the most important, and should be cured if possible before that time as the risk of infection, from the bladder, bowel, or the abscess, is great. Other plastic operations can well be deferred to a more opportune time.

Fellner epitomizes 519 articles on operations

during pregnancy. The general opinion was as follows:

Appendicitis.—Prognosis best if an operation is performed early, and bad if followed at once by abortion. Postpone operation if signs of childbirth are at hand. An operation for appendicitis is indicated more especially in presence of pregnancy. There is greater tendency to a severe form of appendicitis during pregnancy.

Unilateral ovariectomy did not affect pregnancy in four-fifths of the cases. Bilateral ovariectomy resulted in interruption in pregnancy in 21.6 per cent. On the whole, literature shows as a rule that surgical interference does not interrupt pregnancy, unless the nerve centers governing contractions of the uterus are abnormally excitable, or are already excited.

CONCLUSIONS

In concluding I wish to offer the following:

1. All pregnant women who have had any former abdominal disease, or who have unusual symptoms during the pregnant state, should be carefully examined, and their former histories studied for any abdominal or pelvic disease which might interrupt pregnancy or endanger the life of the mother.

2. By a careful investigation of the statistics and from personal experience I believe that operations when carefully performed upon a pregnant woman, do not necessarily cause the uterus to expel its contents, nor do they when indicated result in additional danger to the patient. On the contrary, they may be life-saving by removing a diseased organ before walled-off microorganisms break through the enveloping membrane, and the poison is dissipated throughout the abdomen; or from pressure, pain, etc., uterine contractions expel the fetus.

3. Disease of the tubes or ovaries, and adhesions or growths interfere with the normal expansion of the uterus, and may demand a surgical operation before the expiration of the normal gestation period.

4. Appendicitis should receive the same consideration during the pregnant state as under other conditions. There is far more risk for the patient when a diseased appendix is allowed to remain than if it is removed during the pregnant state. The disease itself is a greater factor in the production of abortion, and an operation adds little to such a possibility.

5. Fibroids, because of their location, may obstruct the pelvic opening or produce pressure upon the bowel, bladder, or pelvic tissue, resulting in adhesions and pain, and possible bowel obstruction. They may degenerate and

cause infection. Many pregnant women should have fibroids removed early to avoid disastrous results.

6. Ovarian tumors, the nature of which cannot be definitely determined, can be safely removed with fewer risks to the mother or child in the average case than when allowed to remain.

7. Other surgical conditions arising during the pregnant state should be carefully considered, and a conservative form of treatment adopted, which often means a surgical operation before the period of labor.

REPORT OF CASES

CASE 1.—Mrs. J., aged 31; nationality, Irish-American; family history, good.

Chief Symptoms.—Complained of pain in the right pelvis, running along crest of ilium inside to back and down in the limb. A physical examination, two months before operation, revealed a prolapse of the right ovary and tube, possibly adherent; uterus low. Patient gave a history of having had an attack of appendicitis about four years ago. She was pregnant about four months at the time. The pain was so severe that it produced a miscarriage. She has had more or less pain ever since that time, especially on the right side.

She was three months pregnant, when an operation was performed and the appendix removed. It was not adherent, but showed signs of a catarrhal inflammation, and contained a few fecal concretions. The end of the right tube was adherent in the right pelvis, curled up and surrounding the ligament and tissue below the ovary, shutting off its blood supply. This ovary was not more than one-quarter its normal size. There was a cyst, about the size of a hazelnut, at the extremity of the tube; it was removed. A larger but similar tube was found on the left side. The left tube was somewhat adherent deep in the pelvis. The omentum and bowel were slightly adherent on that side. The adhesions were all separated, and the tube straightened out. Catgut closed the peritoneum, and figure-of-eight sutures closed the abdominal wall. The patient made an uneventful recovery, and seven months later gave birth to a healthy girl. She had a perfectly normal delivery. The adhesions and constrictions of the ovarian ligaments and vessels were interesting features in this case, and were probably factors in the cause of miscarriage at a former pregnancy.

CASE 2.—Mrs. B., aged 24; occupation, housewife; colored; formerly a teacher. Referred by Dr. R. S. Brown.

Patient gave a history of having had an abdominal tumor or some enlargement for about four years, but no particular alteration in the menses. She had been married less than a year. She had come here from Kentucky, and had consulted a physician only two weeks previous to the time when I saw her first.

Examination showed a fibroid in the right abdomen and pelvis, and a seven months' pregnancy in the left; possibly a cystic ovary also on the left side. The tumor and fetus caused great pressure on the pelvic organs. The tumor was one-third larger than the child. The white count ranged between 18,000 and 20,000; hemoglobin, 75 per cent. She had some fever, ranging between 99° and 101°. She had grown very weak in the last month, so that it became necessary to do something radical, for she was gradually failing.

There being sufficient room for delivery below the tumor, labor was brought on as the safest plan of treat-

ment. Partial anesthesia was produced with chloroform; the os rapidly dilated, and a forceps delivery was made. Not over fifteen minutes were consumed in the work. There was a tear in the cervix on the right side; four chromicised sutures repaired it. The placenta was adherent. It was removed with difficulty by the hand within the uterus. There was considerable hemorrhage. The uterus was packed with gauze; it contracted fairly well. The patient became quite weak; hypodermoclysis was employed, and some stimulants. The patient died a few hours later; the baby lived six hours.

The pressure symptoms and adherent placenta are of especial interest in this case, and no doubt the mother could have been saved had she been seen and operated upon at an earlier and more favorable time.

CASE 3.—Mrs. S., aged 27; primipara; gives a history of having had two or three recent attacks of catarrhal appendicitis. The patient was six months pregnant, and complained of a great deal of pain in the region of the appendix. Temperature ranged between 101° and normal. She was taken to the hospital, and operated upon 36 hours after the first symptoms of the present attack began. A muscle-splitting operation was performed. The appendix was very much enlarged, and contained three fecal concretions. The recovery was perfect, and in due time she gave birth to a healthy child with no unusual symptoms at time of birth or following.

CASE 4.—Mrs. C., aged 33; wife of a physician. Menstruated first at 12 years; painless, but rather profuse. Married at 18 years, and had had nine miscarriages. Three of these miscarriages were at about six or seven weeks; the other at from three to five months. Once she carried the fetus until five and one-half months. This was a case of placenta previa. She was in bed during this time and afterward for about five months. No complications with any of the miscarriages, except with the last, about five years ago, in which case there was a good deal of trouble about getting the placenta; the patient was curetted then. There was a history of a salpingitis sometime in the past. A tumor appeared in the right side of the pelvis in October, 1904, and was comparatively painless until after the middle of January. Since that time it has grown rapidly, and has been annoying. (From the middle of January to middle of February, 1905, it caused a good deal of pain). It was painful when fetal movements occurred, especially.

An operation was performed April 15, 1905. Patient was about seven and a half months pregnant. Ether was given. An incision about four inches in length was made over the tumor. A fibroid was discovered a little anterior to and below the horn of the uterus on the right side. The tumor was about two and a half inches in diameter; it was enucleated. Catgut sutures approximated the walls, and the peritoneum sutured over all. Very little manipulating of the uterus was done. A cyst was then removed from the fimbriated extremity of the tube, the size of a hazelnut. The ovary was found in a normal condition. The abdomen was closed in the ordinary manner. The patient made an uneventful recovery, and is now the proud possessor of a healthy child. The delivery was perfectly normal, excepting a tear.

Microscopic examination of the growth showed a beginning degeneration of the fibroid.

CASE 5.—Mrs. R., aged 40; weight 135; occupation, washerwoman; nationality, Norwegian.

Previous and Present History.—Was married when 21 years old. Has had six children; all easy labors. Has had pain in the lower part of the right inguinal region, which extended through to her back. Near Christmas, 1904, pain was severe. During this time she would work one day, and was sick in bed the next. The bowels were constipated all the time. She complains now of pain in the lower abdomen on the right

side, also of pain in her back. She says that her bowels had not moved for a week until relieved by an enema. She has been nauseated during the time, but has not vomited. Patient has had a decided tendency to draw up the right leg. She is three months' pregnant. There is considerable tenderness over the appendix.

On March 10, 1905, an operation was performed. Ether was given, and an ordinary incision for appendicitis was made, splitting the muscles in the line of the fibres. The appendix was found in about the usual location with few adhesions; a chronic catarrhal inflammation existing. The appendix was removed.

The right ovary was fibrocystic and slightly adherent low down in the pelvis. There was a marked varicose condition of the veins supplying the right ovary and tube. The uterus was not disturbed. Adhesions were broken up, and the ovary raised out of its prolapsed location. The abdomen was closed with layer sutures of chromic catgut and an ordinary dressing applied. The patient felt well after the operation; was practically free of pain and did not vomit. Temperature and pulse normal. Patient made a perfect convalescence, and has been free of the former pain.

CASE 6.—For the history of the following case I am indebted to Dr. D. Edmund Smith, whose patient she was when I saw her in consultation.

Mrs. B., aged 29; mother of five children. For three years she has had painful swelling in the appendiceal region, diagnosed by three physicians as floating kidney. During the last pregnancy she complained of pain to the right of the umbilicus, and a mass, called twins by attending physicians, steadily increased in size. After delivery the mass continued to enlarge, and on the twenty-eighth day she went to bed complaining that something had given way. The tumor bulged on the right side and into the vagina. Another physician was called in, and the cul-de-sac was opened. A quart of serum under great pressure was ejected. About three times the amount escaped during the following twenty-four hours. She continued to grow worse, when Dr. D. Edmund Smith called on the thirty-third day, for the first time. Pulse 160; temperature 100°. The patient was perfectly rational, but was vomiting and was much depressed. There was a slight tympanitis; the bowels had moved freely the day before. There was an area of pneumonic infiltration and attendant changes with large quantities of sputum, which on the thirty-fourth day turned rusty. Respiration, 22 to 24; pulse, small, thready, and weak; heart sound normal but weak. On the thirty-fourth day, at night, fecal vomiting occurred and continued about once in six hours; tympanitis marked. Diagnosed paralysis of intestines, due to septic peritonitis. That evening I saw the patient in consultation with Drs. Smith and Head. Operation was not advised. Patient died the next morning. The temperature rose to 106°; pulse, 210 shortly before death.

Only a partial autopsy was allowed for fear of mutilation. The kidneys were small, firm, and in a normal position. The uterus, ovaries, and tubes were normal in position and size, free from cysts or adhesions. Liver not enlarged; gall-bladder, full but not enlarged. There were twelve perforations in large intestine around cecum; ulcerations, acute and small. The appendix, cecum, and surrounding tissue were one solid mass of adhesions. The appendiceal cavity opened into the intestine and also into the peritoneum, which was full of fecal matter. A mass, probably an enterolith, was in the peritoneal cavity. The specimen was lost, so we could not determine just what it was. The fluid evacuated at operation must have been a serous exudate. No pus was found, but there were large areas of discoloration on the intestines covered with flaky fibres.

The case illustrates the necessity of a careful examination and consideration of the history of pregnant

women. An early operation before childbirth would certainly have given a better chance of saving the life of this patient.

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A FACTOR IN PERINEAL LACERATIONS

William H. Shipps calls attention to the unhappy results of the violent and uncontrolled expulsive efforts of the mother just prior to the birth of the child. He clearly explains why this factor plays an important part in the causation of perineal rupture. The patient is worn out with the exertion which she has been making for hours, and which she believes to have been futile. She is anxious to see the end of her sufferings; and, listen to the advice of her friends, she uses all her reserve force and strains with all the energy of which she is possessed. The writer believes that too short a time is given as a rule for the physiological softening and stretching of the tissues. In his practice he encourages the woman in labor, assuring her that though the pains she is suffering are apparently accomplishing little, they are in fact surely preparing the way for the birth of the child. He, moreover, warns her of the approach of the period just prior to the delivery, when all bearing down efforts must cease. Little difficulty in general is experienced in securing the necessary co-operation of the patient. The integrity of the perineum remains intact in proportion as controlled over the last expulsive efforts of the patient is secured. The writer operates in every case of laceration except the most superficial.—*Medical Record*.

THE PHYSICIAN AS AN INDEPENDENT THERAPEUTIST AND PRESCRIBER, AND AN OPPONENT OF QUACKERY IN GENERAL*

BY W. A. CHAMBERLIN, M. D.

OWATONNA, MINN.

Every member of our profession in Minnesota should read, digest, and assimilate the contents of the very commendable, interesting and instructive paper by Dr. W. S. Fullerton, of St. Paul, published in *The Journal-Lancet*, under date of March 1st. It is such dissections and analyses of the subject as are therein depicted, in conjunction with the important work of the Council on Pharmacy and Chemistry of The American Medical Association, and the meritorious efforts of *The Journal* of the same, the vigorous prosecutions by the two great periodicals of this country, *The Ladies' Home Journal* and *Collier's Weekly*, supplemented by the charitable and indefatigable exertions of many more of the better class of lay publications and some medical journals, which assure, eventually, to restrict irregular practices, charlatanism, fraud, and deceit in the management and control of the afflicted.

Each reputable physician, wherever located, should constitute himself a committee of one for the purpose, not only of enlightening his patients and lay friends respecting nostrums, patent and proprietary, unsavory and quack practitioners and their institutions, and the injuries resulting from their promiscuous and unreliable applications and usages, but he should strive to impress upon the minds of his occasionally thoughtless and erring professional co-workers a like understanding and precaution. The dangers to the people and the actual damages sustained by them from the above-mentioned sources suggest to my mind, relatively speaking, only those of degree, and may be classified under three distinct heads as follows, viz.:

1. Those which follow the subjection of patients to unprofessional, unreasonable, and unwarranted treatment, surgical or otherwise, by such men as operate the institute to which reference was made in the *Journal-Lancet* of March 1st.

2. Those subsequent to a reliance upon nostrums and noxious compounds, and

3. Those resulting from treatment dependent upon proprietary preparations exclusively.

Certain it is that definite and successful prescribing can never result from a general resort to even the most "ethical" and best known proprietaries because of differences in individual resistance, special requirements at varying stages of a disease, and the ever-changing symptoms and frequently presenting complications in nearly all cases of sickness. The above-mentioned are the three most conspicuous elements operating to menace an afflicted public at this time in which the medical profession is most directly interested. It should, therefore, be considered a misdemeanor for any respected medical journal to foster or even to tolerate advertisements from originators of such trash and from the managers of such concerns. The flimsy excuse that the publishing and advertising departments of medical journals are entirely separate, so far as responsibility is concerned, compares, technically, with that offered by many of the clergy, namely, "ignorance of purpose," who vehemently denounce the liquor traffic and its advocates—(I would not have the reader thus infer that my sympathies are in favor of this form of merchandising)—and coincidentally subscribe their names to the most flagrant, disgusting, and even vulgar recommendations of the vilest of compounds for illegitimate purposes, containing up to 42 per cent of alcohol, besides morphine, cocaine, and other potent narcotics, which action tends to influence women, children, and temperance men to acquire an appetite for these artificial stimulants, who would not otherwise have become addicted to their use as a beverage. Thus we should censure and disapprove, by act and argument, every move by any member of our profession or others or by any publication under their control which tends to promulgate the doctrines and practices founded on the above-specified dogmas. And, furthermore, I think we should consider all participants, under whatsoever guise parading, who by direct misrepresentation and coercion extort money from an innocent and ignorant person as instanced in the aforesaid journal, guilty of larceny and embezzlement under existing statutes; and I am compelled to believe that those pretenders

*Read before the Waseca County Medical Society, March 2, 1906.

who cause delay in the management and treatment of scientifically curable diseases until too late for such results to be attained by surgical and medical means available at this time, or who persuade patients to abandon or ignore such advantages, all for a paltry financial consideration, should be deemed guilty of a crime, from a moral standpoint, not less in degree than that of manslaughter.

Even more profoundly do I feel that those who, by actual maltreatment or by subterfuge, inveigle their victims into their confidence to the extent of directly ruining their physical health, as is so often resorted to by not an inconsiderable number of conscienceless, unqualified miscreants, many of whom possess licenses from the state, and whose methods result in disseminating malignant, contagious, and infectious diseases; or who, by resort to procrastinating schemes, allow such diseases to advance beyond control and to terminate fatally, which are in their incipiency amenable to proper treatment, are, morally speaking, self-convicted, malicious slayers of their fellow men.

What a travesty is imposed upon science and justice by our courts and the decisions of their jurors whose authority and precedent are established and legalized by legislative enactment, either through ignorance of legislators or by the allurements and manipulations of an immense aggregation of wealth in the hands of organizations whose principal aim is to perpetuate this traffic in human lives and health!

While these charlatans are permitted to ply their frequently disastrous practices under state or legal protection, the regular physician who is required, these days, to devote an average of ten years from the commencement of his high-school course to graduation for his medical diploma, is compelled to conform to the rigidity of the laws by passing two examinations, one before a college faculty and another before a state board, after which he is obliged to register his diploma in the county where he practices. After all this, did you ever note with what avidity most of the larger daily newspapers and a greater percentage of the public pounce upon him in case of his encountering some, perhaps, unavoidable misfortune, while the reprobate's manœuvres meet with the sympathies and approval of the populace and exonerated by the courts?

No tirade of calumny and invective is too base to heap upon the heads of the worthy unfortunate belonging to the healing art by most irregular practitioners and their publications. As an example of the support accorded the illegal practice prevalent, I hereby submit a case. It was that of a woman operating in

my vicinity whose scheme was to obtain a mock diagnosis of a case by having the patient supply answers to questions submitted in blank form, then to forward this document to an alleged company of physicians in Chicago, and to receive medicines in response, for which the patient paid a magic price on receipt of the same.

Evasion of the laws and legalization of this imposition were approved in this case by a leading attorney of our city acting as judge, after the culprit, arraigned on complaint of myself, had testified that she not only possessed no knowledge of medicine, but that she was totally ignorant of the composition of the stuff which she peddled. One of her diseased and later deceased victims, suffering from chronic interstitial nephritis, who came under my care later, was being manipulated and drugged for a variety of imaginary derangements, and, of course, she rapidly declined, finally succumbing to her primary malady. The verdict in this case was grounded upon the claim that the imposter had received no fees for services. Eight dollars a box for a three-cent package of vaseline or some simple, inert ointment, and seven dollars more for a five-cent box of pills or capsules could not be construed by the venerable judge to constitute a remuneration for services in these fraudulent transactions, hence the sanction of her chicanery by law!

Once more: Suppose a practitioner to depart from the regularly prescribed routine of ethics and the tension of the laws of man and morals so far as to liberate some poor, unfortunate girl from her deplorable predicament, thereby saving to herself her reputation and rescuing her from a degradation and existence worse than death, without a possibility or even thought of a monetary compensation for his service,—I am not, in this connection, discussing the moral aspect of such a procedure, pro or con,—and his conduct should become public.

He is at once branded a criminal and outcast in the estimation of those refined and morally sensitive newspapers and organizations, owned, body and soul, by the corruptionists to whom I have referred; and our courts in general, with a strong avenging public support, are alert and anxious to convict and sentence him to deprivation and obscurity within prison walls, or to impose upon him ruinous fines, while these same influences will appear first to raise a cry in defense of both individuals and corporations whose mismanagement of patients under their charge are just as positively acts of deliberate, wholesale murder as though their victims had been way-

laid and shot to death from ambush, in case action is brought by officials of our profession to restrain them in their blood-thirsty and money-accumulating ventures. Consequently, all newspapers and other publications which depend, even in part, upon these sloughs of iniquity for their current pap, or for personal gain or aggrandizement, and which so far prostitute their pages, especially editorially, as to assume the attitude of aiding and abetting said operators in their nefarious work, thereby bartering their souls for the scriptural "mess of pottage," become particeps criminis in these unlawful proceedings, and every loyal physician should hasten to denounce and boycott such disreputable sheets. These publishers ought to be taught a few lessons in principle and etiquette by being compelled to rely for medical and surgical attendance upon these parasites and humbugs for professional attendance whenever bodily afflictions are visited upon themselves. Parenthetically, I will state that I have recently transferred my former subscription to the St. Paul Dispatch to another daily.

To revert more particularly to proprietary preparations, secret, semi- and non-secret, which are so lavishly and successfully exploited and distributed to the public through the agency and gullibility of our profession without a consideration, directly or otherwise, to us by the manufactures, ostensibly for our benefit or in the interests of the dear people, but in fact to aid in repleting their own coffers by an unscrupulous commercialism. We are, in another sense, utilized as quadrupeds to dramatize the proverbial chestnut episode whenever we condescend to submit to these unethical and derogatory methods of procedure.

The power and means to obviate such an undesirable and injurious system are vested in the members of our profession themselves, and ought to be resorted to by us to checkmate these evils.

There are within our ranks three classes of practitioners upon whom manufacturers may depend to a certainty to act as the media for furnishing recommendations and to solicit patronage for their products:

1. Those incompetent to formulate a rational and strictly scientific prescription adapted to the individual case under consideration.

2. That class who are too indolent, or, in common parlance, too lazy to do so, and

3. A smaller number who account themselves too busy to bestow a thought upon other, better, and more common-sense methods.

There can be no reasonable excuse advanced for these lapses, as it is the cardinal duty of those first mentioned to further qualify themselves in prescription writing; for the second, to extricate themselves from their lethargic habits, and to acquire that professional standing in this matter to the extent of elevating their therapeutic practice to a reliable and respectable plane; and for the third, to demand of themselves the extra time necessary to make this branch of our calling of paramount importance.

Any man authorized to practice medicine in the state of Minnesota who is incapable of improvising or originating medical formulæ for patients whom he has carefully and studiously examined, which will not, on an average, prove superior in efficiency to, and in every way more satisfactory than, those proposed, often by non-medical men who possess no knowledge of pathology in general, is unworthy to enjoy the protection of our statutes as a licentiate. The few proprietaries worthy of recognition as a matter of convenience, not one of which is necessary to the resourceful physician, should be compelled by law to have the precise formulæ, plain and simple, and nothing more, printed upon the label of each package, and he who, after noting such, is unable to construe its meaning and to conceive the indications for the application of its contents, should ignore it entirely.

We are advised by some over-zealous and distraught manufacturers of compounds and patents that if they themselves are to be required to make a publicity of their wares, physicians should be compelled to reveal the contents of their own prescriptions. While doctors' prescriptions are always open to public scrutiny, so far as their possessors may choose to exhibit them, the above demand is both unwise and absurd. In the first place such prescriptions are not secret, and, again, regularly formulated recipes have a reasonable basis for an existence. This reason is founded upon diagnosis of cases for which they are intended. Most proprietaries and patents are recommended for, sold to, and consumed by, deluded patrons whose ailments, if such exist except in their own imaginations, have never been properly diagnosed. Is it then justice to discriminate in favor of these blatant perverters against regularly qualified members of the profession who have not only their own reputation but the weal of the whole community in view?

Diagnosis being the foundation upon which rest the intelligent and scientific management and treatment of all human ills, either physical or psychical, the amelioration of suffering and

the enhancement of longevity of all indisposed or sick persons to any great extent, physicians or laymen, being from the very nature of their perverted states, laboring under some degree of alienation of the mental faculties, are, consequently, not in a proper condition of mind to self-prescribe, i. e., on account of a wanting diagnosis. Neither ought the prescriptions of any physician to become the common property of the patients to be refilled and dispensed to the public ad libitum, as many instances of dire disaster and injuries to innocents could be chronicled from such a course by most experienced practitioners.

Again, no course of drug treatment can be intelligently instituted in any given case, in its incipiency, for indefinite continuation, for reasons heretofore outlined: complications, varying stages, etc. I well remember in the year 1882 at Rush, "Uncle" Allen appearing before his class one morning, letter in hand to which he quite vehemently and somewhat indignantly referred as follows: "I am sorry, gentlemen, that this letter was written by a graduate of this great institution of learning, Rush Medical College." The writer asks: "Dear Uncle: How do you treat typhoid fever?" "Uncle's" rather startling, emphatic, and slightly sarcastic reply was: "How do I treat typhoid fever? Gentlemen, that depends upon what's the matter with the patient!" Everything in the way of suggestion for the care and treatment of the afflicted depends upon an exact diagnosis of every phase of the disease at each given stage.

As an illustration of the regard manufacturers of proprietaries entertain for us and the claims they hold against us as their henchmen and puppets, I would relate the results of two strenuous conferences in which I recently participated with as many of their agents on the road. One of them, representing an extensive concern, pushed to extremes for argument, in answer to my charge that the only respect his employers felt for us was measured by the success we achieve in our capacity of dupes, unpaid agents, or go-betweens for the sale of their products, retorted: "Yes; and we have succeeded admirably in bringing about the desired results."

Another, traveling for a large triangular combination, after a private seance with me, said to my druggist who refused him an order, saying that his patrons among the doctors here were doing their own thinking largely in prescription writing: "Oh, well, we care nothing for these little fellows so long as we have such men as Dr.—, of Minneapolis, and Dr.—," mentioning some famous M. D. in New York, "with us who prescribe our goods generally."

What do we "little fellows" think of an assault of this nature, and how should such men as referred to feel regarding these sinister allusions? I simply refuse these mendacious itinerants audience to the extent of being insulted by them. Brother practitioners, what do you think of listening to a long, vague dissertation upon the action and adaptation of some simple remedy or drug by a young, non-medical man whose principal stock in trade is a verbatim recitation ensconced within his encephalon by carrolled attention to select quotations from headquarters' authorities before embarking upon his persuasive mission?

Diagnosis should present the only indications for prescribing at all, and I would suggest to the doctor who recommends and prescribes proprietaries and nostrums frequently and indiscriminately that he make a comparative and crucial test of his judgment and ability in the matter by selecting a few special patients, examining them carefully, and writing original and self-styled prescriptions adapted to each case according to the indications presenting. Now, for instance, suppose your patient needs, you think, iron, arsenic, and strychnine, and you have so specified instead of writing for any one of the twenty or more different compounds on your druggist's shelves, containing, in some proportion, these constituents. Then take your own prescription to said drug-store, contrast it with those referred to, and note results. I am willing to accept a small wager that not oftener than once in a hundred times would you find the amounts in these ready-to-take preparations to conform exactly to your own idea of treatment in any case. Are you willing to concede such promiscuous, distant, unscientific prescribing superior to yours? The M. D. who recognizes no difference in effects between 1-30 and 1-60 of a grain of strychnine or 1-40 and 1-100 grain of arsenic in formulæ for a particular affection, entertains a vague notion of scientific acuteness. Neither can one physician in ten who makes a practice of resorting to ready-made compositions for filling his prescriptions quote the exact quantities of each remedy contained therein, even though the same be printed upon the package, without reference thereto.

In conclusion: the habit of prescribing proprietary preparations, known or unknown, conduces to mental apathy and carelessness on the part of the principal, to inaccuracy regarding constituents and dosage and to uncertainty as to expected results, often imposing an unnecessary burden of expense upon our patrons as these medicines are usually furnished to the trade only at exorbitant prices.

Lastly, there is a delicate and modest sense of satisfaction and confidence experienced by every intellectual and well equipped medical practitioner who adapts known, tested, thor-

oughly scientific remedies in accurate and positive doses to his individual cases after having assured himself of their precise ailments, pathologically and clinically.

THE DISEASED FAUCIAL TONSIL AND ITS OPERATIVE TREATMENT*

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MINNEAPOLIS

The operative treatment of the faucial tonsil is a subject on which a great deal has been written during recent years, and certainly great advances have been made, not only toward a better appreciation of the many complications that may arise as a result of the presence of a diseased faucial tonsil, but especially in the operative treatment of the same.

Whatever the function of normal tonsillar tissue may be,—and it is still a disputed question,—when the gland becomes hypertrophied and the seat of a chronic inflammation, it not only ceases to exist as a functioning organ and to serve any useful purpose in the economy of the body, but, in its diseased condition, with the crypts and cavities filled with decomposing material, and constantly exposed to the presence of pathogenic organisms, it becomes an incubator for the propagation of these microbes and for the dissemination of their toxins to other portions of the body.

In considering the indications for the extirpation of the diseased tonsil, it is only necessary to remind you of the results which may follow the presence of such a diseased gland, and these may be roughly classed as follows: 1. Mechanical obstruction. 2. Recurring attacks of acute or sub-acute inflammation. 3. Extension of the inflammatory process to adjoining structures, thereby causing an acute or chronic congested condition of the same. 4. Acting as receptacles for foreign matter and pathogenic germs which find lodgement in the crypts and cavities of the diseased tissue. 5. The dissemination of these germs by means of the lymphatics or blood vessels and the infection of neighboring or distant organs of the body.

That form of tonsillar hypertrophy which is sufficiently great to cause a mechanical ob-

struction in the fauces or which is subject to recurrent attacks of acute or subacute inflammation, with its attendant train of symptoms, is generally promptly recognized by the profession as operative, and its removal is advised, but in that form of diseased tonsil termed the submerged tonsil, where the complications that may arise are equally serious and equally dangerous, the indication for their removal is sometimes overlooked, especially in those cases where there are no acute symptoms referred directly to the tonsils. It is a matter of common observation to find remnants of a diseased gland, remaining after a former tonsillotomy, giving rise to serious trouble, and many cases of submerged tonsils are the remaining portions of hypertrophied glands which at some former time have been partially removed.

It is not my purpose to present to you a detailed review of the numerous investigations which have been carried out and the many clinical cases cited which have established the great importance that this diseased gland may have as an etiological factor in both local and general infections. In addition to its influence as a causative factor in diseases of the upper respiratory tract and the many reflex disturbances to which it may give rise, there has been published an abundance of clinical evidence showing the diseased faucial tonsil to be the source of infection in such serious complications as tubercular cervical adenitis, septicemia, pneumonia, gastritis, septic endocarditis, acute articular rheumatism, etc.

I would call your attention to the fact that the actual size of the tonsil is but a minor factor in the indications for its removal; that an old tonsillar stump remaining after a former tonsillotomy, is, if subject to inflammation, capable of giving rise to most annoying and often serious complications; that a submerged tonsil is capable of causing as much trouble as

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a gland that is enlarged to such an extent that it may cause some mechanical obstruction; that the faucial tonsil is situated at the gateway to the lymphatic chain; and that in a case of chronic inflammation of the gland the diseased tissue is likely to extend to the bottom of the gland, and that it is from the deeper portion that the infection is most likely to be carried into the lymph stream and circulation. When we consider these facts, it would seem that the indication would be clear to remove the entire gland, in order not only to relieve the present trouble, but to prevent any recurrence.

In considering the operative methods of removing the faucial tonsil I desire to mention only those procedures which fulfill the indications present in all cases of a diseased tonsil,—namely, the extirpation of the gland. The use of the guillotine has become with me an obsolete method of operating, removing, as it does, but a portion of the diseased tissue. It leaves the remainder of the gland to give rise at some future time to further trouble, and is a procedure which has proven, in my experience, to be extremely unsatisfactory.

The particular method to be employed in the extirpation of the gland will depend upon each individual operator, and will also be governed by the indications present in each individual case, but our aim should be to remove the gland by the simplest, quickest, and most satisfactory method, and the one which is attended by the least danger and inconvenience to the patient.

A method which I formerly advocated for the removal of that form of diseased tonsil termed the submerged tonsil, is the use of the Robertson tonsil scissors, and while excellent results may be obtained by the use of these instruments I believe that, in the great majority of cases of all forms of hypertrophy, the entire gland can be removed by other methods more quickly, easily, and safely, and with less inconvenience to the patient.

The method of removing the gland by cautery dissection is an operative procedure with which I am not sufficiently familiar to warrant my drawing any positive conclusions, but it has always seemed to me that the time required, to thoroughly accomplish the end to be attained, is unnecessarily long, and that in the separating of the eschars resulting from the extensive cautery work, it might subject the patient to the dangers of hemorrhage and infection. However, I have no doubt that in the hands of Pynchon, who has had so much experience in this method of operating, the results are satisfactory.

In mentioning the use of the snare, scissors,

knife, and traction forceps, a method which I almost universally employ, it is unnecessary for me to go into the details of the operation, and I desire to mention only those steps the proper performance of which makes the operation simple and thorough, while a failure to observe them will often be followed by unsatisfactory results.

While this method of operating is usually spoken of as tonsillectomy, by means of the cold wire snare, the use of this instrument is, especially in the case of embedded tonsils, the least important step of the operation, as the complete removal of the tonsil by means of the snare will depend upon the thoroughness and manner in which all attachments of the glands, to surrounding structures, have been separated before the snare is applied. After drawing the gland forcibly towards the median line by means of the traction forceps, the anterior pillar can be separated by means of the blunt-pointed right-angled tonsil knife or the right-angled tonsil scissors. I prefer the former, as the blade can usually be easily passed well down to the base of the gland, and thorough separation made upwards and downwards with less danger of wounding the pillars and causing hemorrhage. After separating the posterior pillar in a similar manner, a point of importance is the thorough separation of the upper portion of the gland at the apex of the tonsillar fossa, and for this purpose I make use of a scissors curved on the flat, and so thoroughly divide all attachments in the supratonsillar space that the upper part of the gland can be readily turned downwards by traction with the forceps. The bottom of the gland can then be separated in a similar manner by means of the tonsil scissors. After the gland has been encircled with the loop of the snare, the blades of the traction forceps should be separated widely enough to grasp firmly both the upper and lower portions of the tonsil, so that when traction is made both the upper and lower portions of the gland will be drawn well out of the fossa, allowing the wire to slip easily down around the remaining part of the tonsil, when it can be readily drawn through and the gland removed.

I usually use a No. 7 piano wire, and without the use of the grooved ring which frequently accompanies a tonsil snare, such a wire possessing sufficient resiliency to enable one to force it thoroughly down around the base of the gland.

When operating under general anesthesia, if the operator has difficulty in using the knife or scissors in the left hand, it will be found convenient in removing the left tonsil to stand at

the patient's left side, in order that he may have the knife, scissors, and snare in his right hand, and in removing the right gland to be seated at the head of the table, and thus have the free use of the right hand for the same instruments.

The reaction following this method of operating is somewhat greater than that following the use of the guillotine, the amount of reaction and discomfort varying considerably in different individuals, and being considerably greater in adults than in children.

In regard to the after-treatment: it is of great importance that the throat should be kept cleansed as thoroughly as possible, by means of sprays, gargles, and a mouth wash during the healing process, and that the patient should be kept under observation and treatment for a sufficient period of time to insure thorough and complete healing of the wound. If this is not done the patient will be subjected to the dangers of a secondary hemorrhage. I have had two such cases occur ten days after the operation from the erosion of a small blood vessel, and while the bleeding was not alarming it was very annoying and somewhat terrifying to the patient and family.

Another point of importance in regard to the after-treatment, more especially in the case of children where the operation includes the removal of adenoids, is the advisability of prescribing some form of an iron tonic, as there is a considerable loss of blood accompanying an adenectomy, and, moreover, many of these little patients are already anemic and poorly nourished as a result of the impaired oxygenation of the blood due to defective breathing. I have, in a number of cases, had a blood count made immediately before operating, a second count taken a few hours after the operation, and a third one after a period of four or six weeks, and a comparison of such counts will show a decrease of reds and a leucocytosis on the second count, followed by a rapid increase of reds during the following few weeks.

The choice of an anesthetic in these cases is a subject of great importance. In the extirpation of a faucial tonsil in an adult, I generally employ local anesthesia, making thorough applications of a 10 per cent solution of cocain and a 1 to 1000 solution of adrenalin, and I usually precede the use of cocain by the administration of 1-20 gr. of strychn. sulph.

In the case of children where it is necessary or advisable to use general anesthesia, our first consideration should be for the welfare of the patient, and that form of anesthesia should be chosen which experience has proven to be the safest, provided it meets the require-

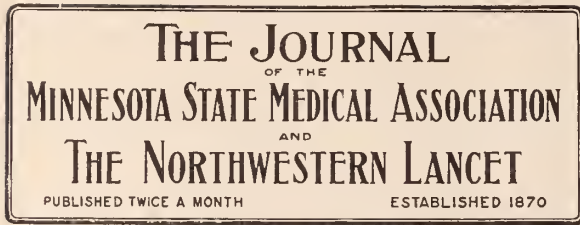
ments of the case. It should always be borne in mind that there is an already existing interference with respiration from the presence of an hypertrophied pharyngeal or faucial tonsil with its encroachment upon the lumen of the air passages.

The more transient anesthetics, such as nitrous oxid and ethyl bromid, produce an anesthesia of too short a duration to be satisfactory in this method of operating, and our choice will be limited to the use of chloroform or ether, or both.

In the absence of contra-indications, such as bronchitis, nephritis, etc., and with the proper care of the patient and avoidance of exposure after the operation, I believe it is the concensus of opinion among operators that the margin of safety is considerably greater in the administration of ether than in the use of chloroform, and this is especially true in this class of cases where there is an interference with respiration from the presence of a nasopharyngeal obstruction. A second point in favor of ether is the possibility of obtaining a longer period of anesthesia, if the anesthetic has been pushed to deep narcosis,—a point of considerable importance in operations on the upper air passages, where the anesthetist and surgeon occupy the same field of operation, and the former is compelled to suspend the administration of his anesthetic in order not to interfere with the work of the latter.

TONSILLITIS

R. M. Niles, in discussing the treatment of this affection, says that the patient should be isolated, should receive broken doses of calomel, followed by a saline laxative or croton oil, quinine in tonic doses. Strychnine, aconitine, sodium salicylate, guaiac and anodynes may also be required. Hot alkaline gargles and a spray of hydrogen peroxide are useful. Often the application of the tincture of vinegar of capsicum produces the most brilliant results. Congestion and edema are reduced, the separation of sloughs is facilitated, granulations are stimulated, vasomotor inertia is overcome, and normal tissue metabolism is re-established. Tincture of capsicum, full strength or diluted with cod-liver oil should be applied to the Schneiderian mucous membranes in the treatment of the rhinitis, which is a frequent concomitant of the tonsillar involvement. The nasal mucosa is first cocainized, and the capsicum is then applied with a cotton-covered applicator.—*Medical Record.*



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ASSOCIATION ATTENDANCE

The number of medical men registered in the State of Minnesota according to Polk's and the Standard directories for 1904, was 1,960.

The Minnesota State Medical Association has a membership of 1,133.

Of the entire number of physicians in the state, regardless of association membership, 904, or 46.1 per cent are members of the A. M. A., and receive the Association Journal.

At the meeting of the A. M. A. in Boston there were 80 medical men registered from Minnesota, 77 from Iowa, 68 from Wisconsin, 12 from South Dakota, and 9 from North Dakota, out of a total of over 4,700 registered.

It is evident that not more than 40 per cent of the physicians who belong to the Minnesota State Medical Association take the Association Journal. It is more than likely that the percentage is less than 40, as many of the physicians who take the Journal are old-time subscribers and have not as yet joined the State Association.

The attendance of Minnesota men at Boston and the attendance at our last State meeting in Minneapolis is not sufficiently representative. The long journey, and perhaps the expense, pre-

vented a larger number from attending the meeting in Boston. This excuse is hardly sufficient to account for the limited attendance at the State meeting.

Why is it? Are medical associations uninteresting? do they bore the average medical man? is he satiated with medical societies? or is he satisfied with the county society?

Since the re-organization plan has approached its completion the county societies have gathered in the majority of medical men in each county, yet there remain many physicians who are indifferent or unwilling to join even the county societies. One thing that may explain the small representation and attendance at the National and State meetings, is the suspicion that both bodies are more or less political in their deportment, and thus do not attract the masses. If the organization methods were better understood by those who do not attend, this feeling of suspicion and distrust would disappear. The important part of a medical society is the scientific and social program.

If the papers are interesting the members will attend. If the social side is attractive to the average member, the attendance should be large. It is exceedingly important that medical men should know one another better, and the only way to bring this about is to meet socially and become better acquainted. Many of the country members hold the city man at a distance, feeling that he is unfair and does not pay them the proper respect, or they feel an embarrassment that is too often displayed between country and city practitioners. This is the wrong view of the matter. Mutual understanding and professional commingling are the means to dissipate any uncertainties. City men learn from the independent and thinking country member who works out his own problems without the aid of others.

The various societies should amalgamate the profession into one harmonious whole. Then, and not until then, will the profession be able to demand from the people the rights and privileges that are due them,—respect, justice, and power. The Journal-Lancet urges the outstanding physicians to join the county and state society, and thus sink individual fault-findings, and cultivate a broad and generous spirit of brotherhood for the good of the profession.

PSYCHIATRIC CLINICS

There seems to be a general awakening among physicians and laymen in regard to the care and treatment of the insane. In a few of the large cities of this country there is a determined effort to establish hospitals and clinics for the study of the insane. At the present time no well equipped

hospital has been organized on the grand scale on which they have been founded on the Continent.

In an article in the April issue of the *Journal of Mental and Nervous Diseases* by Dr. Stewart Paton, several of the German hospitals are described. The most impressive feature of the general plan referred to is the liberal, not to say lavish, expenditure of money for the construction of psychiatric clinics. Bavaria leads in this endeavor. At Erlangen and at Wurzburg there are psychiatric clinics and hospitals; and at Munich the latest and, beyond doubt, the best hospital of its kind in the world has been erected at a cost to the city for buildings alone of over \$500,000. At Nuremberg a receiving ward for mental diseases is connected with the general hospital. A bill has been passed by the New York State Legislature appropriating \$300,000 for the erection of a receiving hospital in New York City to accommodate 200 patients.

Dr. Paton briefly summarizes the advantages of psychiatric hospital as follows:

1. "The cure of many patients who now become hopelessly insane.
2. "The instruction of medical students, as well as practicing physicians, in psychiatry, so that eventually there may be found in the community a greater number of men who are competent to advise whether an individual is capable of standing the mental strain imposed by special forms of education, or is able to endure the nervous strain of the environment in which the individual lives.
3. "The possibility of keeping under observation a large number of individuals whose unstable nervous systems may, if occasion presents itself, become sources of danger to the individuals themselves or to the community.
4. "The examination of cases in which the question of mental responsibility is under debate, and a submission to courts of formal reports based upon observation to supercede the hypothetical 'expert evidence' that so frequently is a parody of justice.
5. "The study of all problems whose ultimate solution will lead to a more comprehensive understanding of the functions of the brain with a view to determining the most efficient methods of increasing the number of individuals in the nation who are capable of rational thought and action."

The study of the individual from a broad standpoint is the aim of all scientific investigation. This does not mean that the mental side of the patient is the only consideration: it means that the history of the development of the individual from his physiological, psychological, and biological growth, the study of his environ-

ment and diseases must be carried on in a systematic manner by specialists who cover the entire field of medicine. Mental symptoms do not necessarily imply that the brain is the seat of disease; it is the man, first, and his disordered organism, second, that must be studied. In a large number of patients the physician will find evidences of disturbed functions of non-nervous organs that fully account for the mental state. Heart, kidneys, liver, intestinal tract, and blood vessels are often the primal factors.

Strains and exhaustion in unstable individuals, combined or accompanied by disordered trunk organs, frequently mask the cause of mental disturbances. Too often these points are overlooked, and patients are hastily committed to state hospitals who should be studied, cared for, and treated in general or psychiatric hospitals before they are deprived of their liberty. Patients suffering from acute illnesses in which mental symptoms are conspicuous symptoms, frequently recover when the temporary disorder is diagnosed and removed. Many protracted forms of disease, seemingly hopeless, disappear when the functions of the body are rested and restored.

It will be years before the legislators appreciate the necessity of preliminary investigation of disease. The remedy lies in the education of the people by the physician. Persistent presentation of the subject may accomplish something. Inactivity of the profession will permit the old order of things to continue.

THE BUSINESS END OF A MEDICAL JOURNAL

The publication of a medical journal is a serious proposition considered from a business standpoint, and more serious to-day than ever before.

There are practically but three sources of revenue, membership dues, subscriptions, and advertising. The first two, dues and subscriptions, when applied to a small state organization, are not large sources of revenue, and, moreover, they are shifting in amount and are always uncertain. The dues paid from the state association vary with the membership, and depend upon the dues paid into the treasury of county societies. There may be annually a deficit, or, if the societies are growing, there may be an increase.

The admission of new members into county societies will ordinarily keep the general membership up to a fair average basis which can be counted upon. Old members drop out from one cause or another, but new members will take their places. During the past year the Minnesota State Association has increased its membership about 150.

Subscriptions from outside members are very uncertain, except with a very old journal, and it is a notorious fact that the collection of all subscriptions is extremely unreliable, hence the dues and subscriptions are not life-sustaining, and a journal which depends for its publication only upon these sources would fail within a year or, at most, two years.

The third source of revenue, the advertising, is more substantial, but under the present so-called reform methods it is somewhat unreliable.

The Journal-Lancet has during the past eight months, under the direction of the publication committee, discontinued nearly two thousand dollars worth of advertising. This is a direct loss, and the deficit can be restored only by securing new advertising.

To one who is unfamiliar with the business side of a medical publication the proposition of obtaining new advertising may seem a simple problem, but to the business manager it is a serious question. The firms who formerly advertised freely are waiting the outcome of the reform movement.

The independent medical journals, even those who carry anything that is presented or can be secured, are more or less concerned about the future. The manufacturers of specialties and proprietary preparations are viewing the field very carefully. The well established houses are making office canvasses rather than advertising contracts.

At the present time and in this present year, while the Department of Pharmacology of the A. M. A. are agitating the subject, the advertising pages of each journal are carefully scrutinized by the physician, partly from curiosity and partly to see which preparations are standing the test. It is therefore a good year to advertise. The advertisements which appear in a state medical journal are presumably of a good class. Some matter may creep in that to some readers may not seem ethical in the highest sense, but it is impossible to please every reader all of the time. Every advertisement that appears in the state medical journals has been carefully gone over, and in each case the formula has been placed before the editor for consideration before it is accepted. It may be possible after a few years to regain what has been lost in the new movement of securing better and higher grades of advertising. For this reason alone the publication of a journal that aims at a high ethical standard cannot be a paying investment unless its reading matter is good and it reaches a large number of readers.

The Journal-Lancet has voluntarily gone into the State Medical Association with an apprecia-

tion of its possible end. The publication committee have eliminated everything that would drag upon the paper, and will do everything that it can to elevate the standard of its reading and advertising matter. To this end the hearty cooperation of the members of the State Association is essential. The difficulties of publication and maintenance demand care and watchfulness, and it is no easy task for editor and publisher.

If any one believes it is a simple matter to publish a medical journal, the editor would suggest that the doubter and critic consult with those who have tried—and failed. Several medical publications have been born in Minnesota, but few have survived. Even those that lived and breathed for a brief period cost the promoters a cash sum that could have been invested in safer and saner ways.

The Journal-Lancet has been published over a third of a century, and its subscription list outside of the State Medical Association will enable it to weather the storm. Its single aim is to make its reading matter hold the long-continued support of old friends.

FEES FOR LIFE INSURANCE EXAMINATIONS

The House of Delegates of the Minnesota State Medical Association unanimously adopted the following resolutions on June 19, 1906:

Resolved, By the House of Delegates of the Minnesota State Medical Association, in regular convention assembled, That we hereby pledge ourselves to exercise skill and care in all examinations for life insurance companies.

Resolved, That we hereby pledge ourselves to adhere strictly to the following schedule of fees for life insurance examinations:

A minimum fee of \$5.00 for each and every ordinary examination, including chemical analysis of the urine.

A minimum fee of \$10.00 for each and every examination where a microscopic examination of urine, sputum, or other secretion is required.

A minimum fee of \$3.00 for each certificate of health for renewal or lapsed policy.

Resolved, That we do not believe any examination for life insurance is complete without the examination of the urine of the applicant, and we are unwilling to make any recommendation on an incomplete examination.

Resolved, That these resolutions shall go into effect and be morally binding upon the members of the Minnesota State Medical Association on and after thirty days subsequent to their adoption.

Resolved, That the Secretary shall within said time send a copy of these resolutions to every insurance company doing business within the state of Minnesota.

CORRESPONDENCE

THE DOCTOR'S AUTOMOBILE

Marshall, Minn., June 20, 1906.

TO THE EDITOR:

Among the subjects thought of seriously by a country doctor from time to time is that of local transportation. He would like a method of getting quickly and comfortably to his patient's bedside in all kinds of weather and over all kinds of roads. Very naturally of late the automobile has attracted the doctor's attention, and valuable lessons of experience have been purchased by many in a vain search to find something that will solve the transportation problem better than a pair of bronchos and a forty-dollar buggy. The writer belongs to this class of wisdom-getters. In 1899 he purchased the fifty-second steam automobile put out by the Mobile Co. of New York, and began using it in his country practice in Lake County, South Dakota. This was the first automobile to be used by a country doctor in his practice west of the Mississippi river. Since then different makes of horseless vehicles have been tried by him in the search for a practical machine to do his work. The knowledge secured by seven years of personal use and close observation is offered gratis to brother physicians to save them from expensive mistakes.

The present type of automobile is built exclusively to meet the demand of votaries of pleasure. It is in no respect a utility machine, but is made to gratify the extravagant tastes of those who want style, speed, and fittings, and do not object to unreasonable expense. The factories have been pushed in order to keep up with the demand of this class of customers, and no attention has been given to get a horseless carriage which meets the hard requirements of a country doctor's work.

Therefore if at present the country doctor expects that he can buy at any price a motor-carriage which will take him with certainty and satisfaction over all kinds of bad roads, in all kinds of bad weather, let me correct his mistaken frame of mind. The present type of automobile is made to run on smooth, dry roads, in pleasant weather. The provisions to overcome such obstacles as muddy roads, deep ruts, stones, or other obstructions in the middle of the road, and proper protection from harsh weather, are not included by the mechanical engineers who devise these vehicles. It is not a difficult task to point out how the desired qualities can be achieved, but thus far there has been no incentive to prompt the production of such a machine.

The gasoline engine is not a difficult mechanism to understand, and the transmission of its power to the wheels of a vehicle is a simple proposition of mechanics; but the actual troubles encountered in handling the present form of automobile is beyond the comprehension of one who has had no experience.

The pneumatic tires furnish about sixty-five per cent of the troubles and expenses. They are extremely unreliable, and are prone to give out usually when the doctor is about half way to attend an urgent call. To stop and waste from one to two hours repairing tires by the roadside is out of the question. Do I hear some one say "Why not use solid tires?" Well, I have investigated this problem very carefully, and if you think that you can get away from tire troubles by using any of the substitutes which are offered you are mistaken. No manufacturer of automobiles or any one who is a disinterested expert will advise you to spend your money for any form of solid or cushion tire with the idea that you will be satisfied after you try them. Do not make the mistake of believing the statements of enthusiasts who think they have solved the problem, and want you to run all the risk of investing for their benefit. And do not read seriously any testimonial of anything. Testimonials are, properly speaking, nothing but bait for suckers.

The expense of running an automobile is made up of repairs, and repairs, and repairs. The gasoline and lubricating oil used cut but a small figure. The average expense of running a two-cylinder touring-car costing \$1200 to \$2000, is ten cents for every mile run. Runabouts cost almost as much.

On ordinary country roads an automobile can not be used more than twelve days out of each month on an average.

The life of an automobile as now constructed is three years.

After one year's use it will sell for one-half its original cost if well preserved.

It is not safe to buy a second-hand automobile without the judgment of an honest expert. A ride in it is no test at all.

Now, please do not write me that there is a machine made in Chicago that meets all the objections of ordinary automobiles.

The statements which I have made are deliberate ones, and I have investigated every automobile manufactured in the United States.

The "Doctor's Automobile" has not yet been constructed, and for anything but pleasure riding and visits when conditions are favorable, the present automobile will generally prove very unsatisfactory.

Respectfully,

A. D. HARD, M. D.

NEWS ITEMS

Dr. J. H. Dudley has moved from Heron Lake to Windom.

Dr. Martin L. Goldberg has moved from Twin Valley to Lanesboro.

Dr. J. H. Trimbo, of Runnels, Iowa, has located at Henderson.

Dr. Enoch Haugseth has moved from Lake Park to Twin Valley.

Dr. E. Paul Campbell has moved from Fari-bault to Merriam Park.

Dr. Wadel and Schanche, of Portland, N. D., have dissolved partnership.

Dr. Walter E. Truax, of Breckenridge, will move to California next month.

Dr. P. F. Kearney, of Bismarck, N. D., has moved to Glen Ullin, in the same state.

Dr. H. A. Nass, of Mabel, was married last month to Miss Mamie Johnson, of the same place.

Drs. C. H. and W. J. Mayo have given two blocks of land and \$1,000 to Rochester for park purposes.

The local paper (The Tribune) of Ashley, N. D., says there is a good opening at that place for a physician.

Dr. Zella White Stewart, of Grand Forks, N. D., has been doing post-graduate work in New York City.

Dr. W. D. Hammond, the homeopathic physician of Isanti, has been doing post-graduate work in Chicago.

Dr. R. J. Sewell has sold his hospital at Nashwauk, and will move to Scanlon, where he will open a hospital.

Dr. Syver Vinje, who has been doing post-graduate work in Chicago, has returned to his practice at Henning.

Dr. J. O. L. Moeler has located at Langford, N. D., and entered into partnership with Dr. T. J. Eltun, of that place.

Dr. William J. White, the Philadelphia surgeon, was operated upon last month at Rochester for cancer of the bowels.

Friends of the late Dr. E. D. Steel, of Mankato, have presented his picture to the Blue Earth County Medical Society.

A company has been incorporated to build a hospital in Rapid City, S. D. Dr. F. N. Enrick is one of the incorporators.

Dr. H. Dean, who has been practicing without a license in the northern part of the state, was fined \$50 last month at Northome. He plead guilty.

Dr. N. A. Biorn, of Ada, is in the east doing post-graduate work. Dr. B. F. Osborn, of Minneapolis, has charge of his practice during his absence.

Dr. W. V. Gulick, who has been connected with St. Mary's Hospital, Rochester, for some months, has gone to Spokane, Wash., where he will probably locate.

Dr. R. M. Shaw, a recent graduate of McGill, has been appointed assistant on the staff of the Budd Hospital of Two Harbors. Dr. Hoff, of the staff, has retired.

Dr. Charles J. Watson, who has been practicing a short time at Sauk Rapids, has been sent to the Fergus Falls asylum because of mental derangement caused by the use of cocaine and morphine.

Dr. A. W. Stinchfield, who has been connected with the Drs. Mayo for fifteen years, has retired from the firm, which changed its name to Drs. Mayo, Graham & Co., Drs. M. C. Millet, Henry S. Plummer and Edward Starr Judd being the other members of the firm. Dr. Stinchfield will be closely associated with the work of the firm along his special line.

FOR SALE

A good general practice of over \$3,500 annually in town of about 400 in Southwestern Minnesota; first-class farming country; nearest competition 14 miles. Practice goes to purchaser of office and business lots and office furniture with some appliances; all for \$1,500; \$1,000 cash, balance on time if desired. Selling because of health of family.—Address C., care of this paper.

PRACTICE FOR SALE.

Intending to study a specialty in Europe before re-locating in a larger city, I offer for sale my office equipment, instruments, drug stock, etc. (everything up-to-date necessary in the practice), in Southern Minnesota, city of 2,500 (rich farming country surrounding). Cash practice averages \$3,500 a year, and goes to purchaser of my outfit at inventory price, \$1,200, for quick cash sale. If you want to step into a good practice address "S.," care of this Journal.

AUTOMOBILE FOR SALE

A 1905 Knox automobile, 16-horse power, carries 4 people; has 4 new tires, newly painted; engine better than last year; has top and lamps. Reason for selling, owner is buying a larger car. An ideal machine for a physician. Address, M., care of this journal.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

VOL. XXVI

AUGUST 1, 1906

No. 15

TRANSACTIONS OF THE MINNESOTA STATE MEDICAL ASSOCIATION

THIRTY-EIGHTH ANNUAL MEETING

1906

OFFICERS AND COMMITTEES—1906

OFFICERS

PRESIDENT

HARRY A. TOMLINSON, M. D. St. Peter

FIRST VICE-PRESIDENT

EDWIN Y. CHILTON, M. D. Howard Lake

SECOND VICE-PRESIDENT

FLETCHER W. PENHALL, M. D. Morton

THIRD VICE-PRESIDENT

PIERRE C. PILON, M. D. New Paynesville

SECRETARY

THOMAS McDAVITT, M. D. St. Paul

TREASURER

RICHARD J. HILL, M. D. Minneapolis

COUNCILOR—FIRST DISTRICT

E. A. HENSEL, M. D. (3 years) Alexandria

COUNCILOR—SECOND DISTRICT

WALTER COURTNEY, M. D. (1 year) Brainerd

COUNCILOR—THIRD DIST. AND PRES. OF COUNCIL

W. S. FULLERTON, M. D. (1 year) St. Paul

COUNCILOR—FOURTH DISTRICT

F. A. KNIGHTS, M. D. (3 years) Minneapolis

COUNCILOR—FIFTH DISTRICT

H. M. WORKMAN, M. D. (1 year) Tracy

COUNCILOR—SIXTH DISTRICT

A. E. SPALDING, M. D. (2 years) Luverne

COUNCILOR—SEVENTH DISTRICT

F. A. DODGE, M. D. (3 years) Le Sueur

COUNCILOR—EIGHTH DISTRICT

A. O. BJELLAND, M. D. (2 years) Mankato

COMMITTEES

COMMITTEE ON SCIENTIFIC WORK

H. J. O'BRIEN, M. D., Chairman St. Paul

S. H. BOYER, M. D. Duluth

THE SECRETARY Ex-Officio

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

ARTHUR SWEENEY, M. D., Chairman St. Paul

J. W. BELL, M. D. Minneapolis

C. M. CANNON, M. D. St. Paul

THE PRESIDENT Ex-Officio

THE SECRETARY Ex-Officio

COMMITTEE ON NECROLOGY

J. G. CROSS, M. D. Minneapolis

MEMBERS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

Delegates

FOR ONE YEAR

JOHN T. ROGERS, M. D. St. Paul

FOR TWO YEARS

ALFRED E. SPALDING, M. D. Luverne

Alternates

FOR ONE YEAR

JAMES B. McGAUGHEY, M. D. Winona

FOR TWO YEARS

JOHN J. EKLUND, M. D. Duluth

Roster of the House of Delegates

SOCIETIES	DELEGATE	ALTERNATE
Blue Earth	J. W. Andrews	Mankato
Blue Earth Valley	F. L. Durgin	Winnebago City
Brown-Redwood	J. L. Adams	Morgan
Camp Release	C. H. Mesker	Olivia
Camp Release	D. N. Jones	Gaylord
Central Minnesota	J. F. Whiting	Spencer Brook
Chisago-Pine	Thos. Zeien	North Branch
Clay-Becker	L. W. Hyde	Moorhead
Dodge	R. T. Adams	Mantorville
Freeborn	T. F. McKey	Albert Lea
Goodhue	A. T. Conley	Cannon Falls
Hennepin	O. E. Linjer	Minneapolis
Hennepin	C. G. Weston	Minneapolis
Hennepin	C. H. Hunter	Minneapolis
Hennepin	G. C. Barton	Minneapolis
Hennepin	J. H. Stuart	Minneapolis
Houston-Fillmore	F. A. Drake	Lanesboro
Kandiyohi-Swift	C. Johnson	Willmar
Lyon-Lincoln	A. J. Cox	Tyler
McLeod	B. S. Nickerson	Glencoe
Meeker	J. W. Robertson	Litchfield
Mower	W. A. Frazier	Lyle
Nicollet	G. F. Merritt	St. Peter
Olmsted	H. S. Plummer	Rochester
Park Region	O. M. Haugan	Fergus Falls
Rafnsey	Arthur Sweeney	St. Paul
Ramsey	J. A. Quinn	St. Paul
Ramsey	Wm. Davis	St. Paul
Red River Valley	G. S. Wattam	Warren
Rice	W. H. Rumph	Faribault
Scott-Carver	W. H. Phillips	Jordan
Southwestern	M. Sullivan	Adrian
St. Louis	C. F. McComb	Duluth
St. Louis	C. A. Stewart	Duluth
Stearns-Benton	W. L. Beebe	St. Cloud
Steele	T. L. Hatch	Owatonna
Upper Mississippi	L. M. Roberts	Little Falls
Wabasha	E. O. Cooley	Madelia
Watonwan	D. S. Cummings	Waseca
Waseca	E. O'B. Freleigh	Stillwater
Washington	C. R. Christenson	Starbuck
West Central	D. B. Pritchard	Winona
Winona	T. J. Catlin	Delano
Wright		
	F. W. Davis	St. Clair
	H. P. Johnson	Fairmont
	J. B. Wellcome, Jr.	Sleepy Eye
	J. H. Titus	Sacred Heart
	W. P. Lee	Fairfax
	A. J. Lewis	Mora
	Adolph Stierle, Jr.	Rush City
	L. C. Weeks	Detroit
	F. F. Clifford	West Concord
	G. W. Barck	Albert Lea
	A. J. Murdock	Minneapolis
	A. T. Mann	Minneapolis
	L. M. Crafts	Minneapolis
	S. P. Rees	Minneapolis
	E. H. Beckman	Minneapolis
	W. E. Browning	Caledonia
	C. L. Schofield	Benson
	Wm. Wakefield	Lake Benton
	J. B. Clement	Lester Prairie
	C. A. Hegge	Austin
	G. W. McIntyre	St. Peter
	R. C. Dugan	Eyota
	A. C. Baker	Fergus Falls
	J. T. Christison	St. Paul
	Walter Ramsey	St. Paul
	E. J. Abbott	St. Paul
	H. Holte	Crookston
	P. A. Smith	Faribault
	John Landenberger	New Prague
	J. A. Schultz	Emmons
	A. E. Harwood	Eveleth
	S. H. Boyer	Duluth
	A. D. Whiting	St. Cloud
	Geo. Schulze	Owatonna
	J. A. Thabes	Brainerd
	J. A. Slocumb	Plainview
	W. H. Rowe	St. James
	J. F. Lynn	Waseca
	E. E. Welles	Stillwater
	E. A. Eberlin	Glenwood
	L. H. Munger	Winona
	E. P. Hawkins	Montrose

Place of Next Meeting will be

DULUTH

Tuesday, August 20, 1907

Proceedings

OF

The House of Delegates

TUESDAY, JUNE 19, 1906

In the absence of the president, Dr. C. H. Mayo, the House of Delegates was called to order by Dr. D. N. Jones, of Gaylord, first vice-president, at two o'clock in the afternoon, in the parlor of the Masonic Temple, Minneapolis.

The minutes of last meeting was approved, on motion, as they appear on the record.

The first order of business was the appointment of a committee on credentials, and on motion of Dr. McDavitt the chair was instructed to appoint a committee of three.

The chair appointed as such committee Drs. A. E. Spalding, Luverne; W. S. Fullerton, St. Paul; Warren L. Beebe, St. Cloud.

A short intermission was taken while the committee considered the credentials submitted.

When the House reconvened the chairman, Dr. Spalding, reported the following delegates entitled to seats: (See page 310.)

The next order of business being the report of the treasurer, Dr. R. J. Hill submitted the following:

TREASURER'S REPORT

R. J. HILL, M. D., MINNEAPOLIS

Dr. R. J. Hill, Treasurer, in account with the Minnesota State Medical Association

1905	Dr.		
May	24	To balance on hand	\$2,801.58
	26	Thos. McDavitt for Brown-Redwood	6.00
	27	Thos. McDavitt for Brown-Redwood	2.00
	27	Blue Earth Co., F. N. Hunt	2.00
June	1	Thos. McDavitt for Hennepin Co.	12.00
	1	Olmsted Co., Dr. A. F. Kilbourne	2.00
	1	Blue Earth Valley	18.00
	1	Dodge County	16.00
	1	St. Louis Co., S. Stocker	2.00
	1	J. B. Lewis, St. James	2.00
	5	Brown-Redwood	6.00
	10	Renville Co., J. S. Kilbride	2.00
	11	Scott-Carver, Jas. McKeon	2.00
	16	Blue Earth Valley, C. N. Burton	2.00
	26	Scott-Carver, H. P. Fisher, 1904-05	4.00
	29	Ramsey County	14.00
July	1	Waseca Co., H. O. Hagen	2.00
	1	Blue Earth Valley, H. P. Johnson	2.00
	8	Wabasha Co., J. F. Bond	2.00
	10	Blue Earth Valley, S. C. Schmitt	2.00
	11	Goodhue Co., Chas. Hill	2.00
Aug.	31	F. D. Brandenburg, Mankato	2.00
Sept.	14	Park Region, J. L. Livingston	2.00
	14	McLeod Co., Kee Wakefield, Fred Kohler	4.00
Aug.	28	Brown-Redwood, G. L. Gossler	2.00
Oct.	11	Winona Co., C. P. Robbins	2.90
	23	St. Louis Co.	45.89
	26	Ramsey Co.	4.00
	29	Chisago-Pine	2.00
	31	Hennepin Co. for 9 members	18.00

Nov.	9	Renville-Chip., Lac qui Parle, etc.	2.00
	24	Ramsey Co.	2.00
	24	Winona Co.	2.00
Dec.	5	Blue Earth Valley	2.00
	20	Wabasha Co.	2.00
Jan.	8	Central Minnesota	20.00
	8	Watonwan Co.	10.00
	8	St. Louis Co.	10.00
	8	Goodhue Co.	16.00
	22	Goodhue Co.	6.00
	22	St. Louis Co.	50.00
	23	Aitkin Co.	8.00
	23	Aitkin Co.	2.00
	23	Nicollet Co.	28.00
	26	Goodhue Co.	4.00
	26	Olmsted Co.	2.00
Feb.	7	McLeod Co.	32.00
	15	Wabasha Co.	30.00
	15	Blue Earth Valley	22.00
	17	Southwestern Minnesota	38.00
	22	Renville, Chippewa-Lac qui Parle	62.00
Mar.	31	Houston-Fillmore	42.00
	31	Freeborn Co.	24.00
		Waseca Co.	20.00
		Stearns-Benton Co.	50.00
		Goodhue Co.	6.00
		Winona Co.	52.00
		West Central	42.00
		St. Louis Co.	72.00
		Scott-Carver Co.	24.00
		Washington Co.	30.00
		Steele Co.	18.00
		Blue Earth Valley	4.00
		St. Louis Co.	28.00
		Kandiyohi-Swift Co.	26.00
		Red River Valley	70.00
		Camp Release District	28.00
		Lyon-Lincoln Co.	30.00
		Chisago-Pine Co.	36.00
		Wright Co.	32.00
		Goodhue Co., Dr. Hewitt	2.00
		Southwestern Minnesota	20.00
Apr.	4	Blue Earth Co.	68.00
		Mower Co.	42.00
		Dodge Co.	18.00
		Brown-Redwood Co.	26.00
		Rice Co.	40.00
		Southwestern Minnesota	2.00
		Lyon-Lincoln Co.	2.00
		St. Louis Co.	10.00
Apr.	4	Meeker Co.	18.00
		Ramsey Co.	170.00
		Camp Release	6.00
		Clay-Becker Co.	38.00
	5	Hennepin Co.	450.00
		Central Minnesota	8.00
		Camp Release	2.00
	10	Red River Valley	16.00
	10	Park Region District	72.00
		Olmsted Co.	38.00
		Camp Release	2.00
	11	Red River Valley	2.00
	12	Olmsted Co.	6.00
	16	Watonwan Co.	2.00
	16	Red River Valley	2.00
	18	Hennepin Co., H. M. Morton	2.00
	18	Brown-Redwood Co.	22.00
	23	Park Region District	4.00
	28	St. Louis Co.	2.00
	28	Stearns-Benton Co.	2.00
May	1	Upper Mississippi Valley	76.00
	1	Park Region District	2.00
	5	Ramsey Co., additional	52.00
	5	Red River Valley	2.00
	7	Blue Earth Valley	2.00
	7	Southwestern Minnesota	2.00
	7	Stearns-Benton Co.	2.00

7	Steele Co.	4.00
7	St. Louis Co.	2.05
9	Camp Release District	2.00
11	Camp Release District	4.00
11	Dodge Co., C. E. Bigelow.....	2.00
15	Washington Co.	2.00
21	Blue Earth Valley	2.00
23	St. Louis Co.	6.00
26	Washington Co.	2.00
31	Lyon-Lincoln Co.	2.00
Total Debit to June 10.....		\$5,229.52
Total Credit to June 10.....		1,671.38
Balance on hand June 10.....		\$3,558.14
Balance on hand from change of form of collection		339.70
Dr. R. J. Hill, Treasurer, in account with the Minnesota State Medical Association		
1905 Cr.		
June 1	First National Bank, order from Secretary	\$ 10.00
2	Young & Lightner, legal advice....	25.00
2	Chas. V. Hunsaker, Treasurer's Bond	15.00
5	A. G. Long, stenographer.....	50.00
6	McGill-Warner Co., badges & placards	22.00
6	Allen Hazen, N. Y., check for expenses as per agreement F. F. Wesbrook	100.00
6	C. E. Van Duzee, illustrating lecture.	10.00
7	W. L. Rodman, as per order C. H. Mayo	80.50
7	E. A. Hensel, Councilor 1st District.	24.46
8	Return check to J. B. Lewis, St. James	2.00
13	F. F. Wesbrook	10.35
13	Bertha D. McGuire, printing.....	4.50
16	Peters & Baly, printing.....	35.90
16	C. H. Mayo, program committee....	3.00
30	H. G. Neal, use of chairs.....	2.25
30	C. W. Cunningham & Co., printing for Secretary	4.50
July 1	A. Bulove, stenographer for Secretary	8.00
14	J. A. Schlener & Co., books, etc., for Treasurer	1.05
19	H. E. Wedelstaedt, paper for Secretary	1.60
Aug. 1	A. Bulove, stenographer for Secretary	8.00
12	Peters & Baly, blanks for roster for Secretary	5.50
19	Thos. McDavitt for stenographer....	6.00
24	W. S. Fullerton, expenses as per bill	23.10
Sept. 13	Thos. McDavitt, Secretary, for incidentals	11.00
15	Miss A. Bulove, stenographer for Secretary	8.00
25	Thos. McDavitt, stenographer, express and stamps	5.59
28	A. M. Association, 2,000 copies membership	4.00
Oct. 19	Remington Typewriter Co., repairs for Secretary	1.05
19	Enga Thorson, stenographer for Secretary	8.00
Nov. 24	Thos. McDavitt, for stenographer to Nov. 23	10.00
27	W. A. Jones, Lancet Pub. Co.....	85.25
Dec. 8	Harriet De Young, work on roster...	4.00
20	Thos. McDavitt, for stenographer....	8.00
26	W. A. Jones, Lancet Pub. Co.....	85.25
30	Thos. McDavitt, incidentals.....	2.50
Jan. 2	Young & Lightner, for drawing contract with N. W. Lancet.....	10.00

30	W. A. Jones, Lancet Pub. Co.....	85.25
30	Thos. McDavitt, for stenographer...	10.00
Feb. 7	Brown, Treacy & Sperry Co., for Secretary	1.00
7	Peters & Baly, note-heads for Secretary	2.75
17	Peters & Baly, envelopes for Secretary	34.35
Mar. 30	W. A. Jones, Lancet Pub. Co., 2 mos.	170.50
31	N. W. Lancet, 200 copies Constitution and By-laws	7.00
31	Thos. McDavitt, stenographer to March 1	10.00
31	Thos. McDavitt, stenographer to March 29	8.00
Apr. 4	Smith-Premier Typewriter Co., supplies for Secretary .....	.90
11	C. H. Bradley, Treasurer, refund Hennepin Co.	4.00
28	Peters & Baly, 1500 ic envelopes for Secretary	19.10
May 1	Dr. C. F. Coulter, refund Upper Miss. Valley	4.00
1	W. A. Jones, Lancet Pub. Co. (April)	85.75
1	Thos. McDavitt, stenographer to May 3	10.00
7	W. A. Jones, Lancet Pub. Co., additional roster	5.33
21	Peters & Baly, programs, invitations and cards	17.50
31	Enga Thorson, stenographer for Secretary	8.00
31	W. A. Jones, Lancet Pub. Co.....	92.60
	Treasurer's salary	100.00
	Secretary's salary	300.00
		<u>\$1,671.38</u>

On motion of Dr. Arthur Sweeney the report was unanimously adopted.

SECRETARY'S REPORT

THOS. MCDAVITT, M. D., ST. PAUL

The Secretary, Dr. Thos. McDavitt, presented the following report:

The Secretary's report is very short this year. He has to report 1,133 members on the roster up to date, which is a gain of 128 since the last report. There has been but one new society organized. The Aitkin County Society has detached itself from the Upper Mississippi Society, and has organized a county society by itself, consisting of eight or nine members.

The Secretary has to report the amalgamation of the Sibley County Society and the Renville-Chippewa Society, and that during the past year they have changed the name to that of the Camp Release District Medical Society, as it was becoming rather burdensome with five or six hyphenated names.

The Secretary is very glad to report that the county societies as a usual thing have sent in their assessments very promptly on or before the first of April, as is required by the constitution.

So far as the finances of the Association are concerned, as they have passed through the Secretary's hands, and there being, according to the treasurer's report, some \$3,500 or \$3,600 on hand, we are certainly in a fair financial condition.

There is nothing of particular interest to report except that we have but one unorganized county, which is Dakota county. The Councilor of that district has been using his utmost endeavors throughout the year to get this county organized, and he has been down there two or three times and has carried on correspondence with them. The Secretary and the Councilor had a meeting with the Dakota County men three or four months ago when we had them all together, and

then supposed we had every county organized. They did organize, but that is the last we officially heard of the matter so we have to report Dakota County still unorganized.

There is nothing of further interest that the Secretary has to report at this time.

On motion of Dr. J. H. Stuart the report was unanimously adopted.

The Chairman: We will now listen to the report of the committee appointed at the last annual meeting to confer with the State Board of Medical Examiners for the purpose of establishing greater unity and more harmonious relations between the Board and this Association. The Secretary will read the report.

The Secretary then read the following report:

REPORT OF COMMITTEE TO CONFER WITH
THE STATE BOARD OF MEDICAL
EXAMINERS

Mr. Chairman and Members of the House of Delegates:

Your committee appointed at the last annual session to confer with the State Board of Medical Examiners relative to a more rigid enforcement of the medical law, beg leave to report that your committee was given a courteous hearing by the board at the April meeting, at which time a full, free, and frank discussion of the entire subject followed.

As is well known to every member of the Minnesota State Medical Association, the State Board of Medical Examiners, under the Practice Act, is charged with two distinct and important duties:

1. To examine and license physicians and surgeons.
2. To punish persons violating the provisions of the law.

In the judgment of your committee the board has been diligent and faithful in the performance of the first named duty, thereby assuring a high standard of professional attainments on the part of all licentiates beginning the practice of medicine within our borders.

In respect to the other equally important duty, that of punishing violators of the law, there is, in the judgment of your committee, notwithstanding the well known weakness of the law, just cause for criticism of the past lax course pursued by the Board in prosecuting violators of the law.

Your committee feel that with the amended law, in force since March 1, 1906, there is no further excuse for a continuance of the past masterly inactivity of the Board toward violators of the law. However, we should as a profession remember that with the most efficient law and the most active Board, successful enforcement of the law is possible only with the co-operation and assistance of the profession, aided by an educated public.

Your committee would therefore recommend that every possible assistance be given the State Board of Medical Examiners by the officers of this Association, and secretaries of district and county societies, and that every member of this Association feel it his duty henceforth to uphold the Board in its efforts to rid the state of quacks and charlatans.

The importance of closer affiliation and co-operation between the Board and the profession, regular and homeopathic, leads your committee to recommend that the all-important question of co-operation be referred to the Legislative Committee of this Association, with the request that the committee confer with the State Board of Medical Examiners and, if possible, formulate a satisfactory plan of co-operation.

(Signed) JOHN W. BELL, M. D.
THOS. McDAVITT, M. D.
R. J. HILL, M. D.

Dr. Arthur Sweeney moved that the report of the committee be accepted.

Dr. Sweeney: I would like to inquire whether the committee who have conferred with the State Board of Medical Examiners have submitted to the Board any plan by which such affiliation could be brought about.

Dr. J. W. Bell: Various methods were suggested, but I think no definite plan of procedure was suggested or submitted. A very free and frank discussion followed, and yet out of that discussion I think nothing very definite resulted, or at least we were not able to arrive at anything that was definite. It was with that idea in mind that your committee suggested, as we have done in the report, that the matter be taken up by the Legislative Committee, one of our standing committees, and more time given to work out some feasible plan of operation. There is no question but that there is great need of closer affiliation and more cordial co-operation. I think that is all that is necessary in order to make the law all that it should be, and I am very happy to report to this body that the Board is just as anxious to make the law operative and efficient as we are to do so. I know they labor under a great many disadvantages, not having sufficient funds, and while the old law was in no way satisfactory, the present law is much more satisfactory, and it would at least seem to the committee to act much more speedily and accomplish more under the present amended law, and we believe with the amended law the Board will be able to do a great deal more efficient work in the future.

Dr. W. S. Fullerton: I wish to say something, as secretary of the State Medical Examining Board, in regard to the impression which seems to be almost universal among the profession of the state. That report is distinctly wrong in one or two points. I do not wish to be understood as trying to avoid any of the duties of the secretary of the Board. I am perfectly willing to prosecute, but that is simply a duty of the Board by custom. There is nothing in the law that requires the State Board of Medical Examiners, simply on the report of a member of the profession that some man is practicing medicine illegally, to go to the trouble and expense of chasing all over the state of Minnesota after evidence that will stand in a court of law. We are perfectly willing to bear the onus of prosecution if called upon to do so, but it seems to me the parties chiefly interested in the locality where this illegal practice is committed should be the ones to look up the evidence. They are on the ground and can do it more easily than any member of the Board. It is not sufficient to report that a certain man is practising medi-

cine illegally, but the law requires that the charge shall be explicit, one that can stand in court, and the day and date must be given.

This report also states that the present law is more easy to work under than the old law. It is not. The very thing we wished left out of the new law was by some enemy of the profession put in again, that is the definition of "the practice of medicine." The old definition of the practice of medicine is continued in the present law. It is the hardest thing we have to contend with, and leaves us practically in the same condition we were in under the old law. There has been no plan brought before the Board for co-operation, but the secretaries of the various county societies can be of great aid in prosecuting illegal practitioners. I believe we ought to work together in harmony, and I hope we shall be able to get a great deal of assistance from the secretaries of the county societies. Dr. Linjer, a member of the Board, is present, and I would like to hear his views.

Dr. O. E. Linjer: I do not know that I have anything particular to add to what has already been said by Dr. Fullerton. I can say this, however, that the members of the State Board are just as anxious, and I think have just about the same views in this matter, as the rest of the profession. It concerns the members of the State Board just as much as it does the rest of the profession, and concerns the profession as much as it does the State Board. The law before this was enacted in 1896, and that law, which was in effect up to the first of March, was practically inoperative. It was absolutely useless. There could be nothing whatever done under that law for the simple reason that any case that the Board tried to prosecute had to go before the grand jury, and from the grand jury into the district court. It took so much time, and so much machinery of the law was required to be put into motion that the law was practically inoperable. The present law in that respect, of course, is better for the reason that it allows prosecution in a justice court. That is simpler, but even the revised medical practice act will be successful and operative only to the extent of the medical practitioner being interested in having it enforced. Just during the few weeks I happened to be secretary of the Board I saw enough to convince me that it is simply impossible for the secretary of that Board to carry on these prosecutions, and carry them on successfully, without the aid, in the first place, of the medical profession. The public at large—I do not know why, but we all know how it is when we bring a suit—invariably sympathizes with the other fellow, and not only the people, but the lawyers and the judges have the same idea. I do not think it is because

they hate us particularly, but it is because they love the other fellow more.

I would suggest, as has already been suggested, that the different county societies and district societies interest themselves in this matter, and that the secretaries or boards of censors, or whatever they may be in these county and district societies, assist the Board by getting evidence, and what we mean by evidence is evidence that will hold in court. It is not enough to say that a man thinks another man is practising medicine when he has no right to practice. The court must have the evidence in court. As has been said before, our present state law is out of date many years and should be changed.

For one thing we have no funds with which to work, and there are many other things in the law that should be changed in order to make it a useful law, a law under which we can prosecute a case and from which we may hope to get some results, and I would suggest to the State Medical Association that the Legislative Committee, or whoever has charge of it, from now on until the meeting of the next Legislature, study that matter up thoroughly so that we may get something that will be satisfactory.

Dr. Arthur Sweeney: I do not feel very much like threshing this all over again. This matter was brought up at the last meeting of the Association, and this resolution was introduced at my request asking for the appointment of this committee. I feel that the State Board of Medical Examiners have been, and still are, inefficient for two reasons: One is lack of interest and sympathy between the State Board and the Association, and the other is due to certain conditions in the law. In regard to the legal relations, the law cannot be changed; we might as well give that up. I have had a few years' experience with legislators, and I know that every effort that the Legislative Committee has made during the five or six years past has been absolutely futile. We thought we had the law in such shape that it definitely settled the definition of the practice of medicine, but Mr. Horton shoved in the old law. The legislator is very reluctant to change a law. I do believe it is possible to amend the present law so it will be efficacious, but the new law is better than the old in this particular at least, that it is not necessary now to take complaints before the grand jury, and by abolishing the double penalty of fine and imprisonment, and reducing it to a fine it comes within the jurisdiction of justice courts, and consequently the matter does not have to go before the grand jury. I know there have been successful prosecutions under the old law. I know that as late as last year there were successful prosecutions under the

old law, thus proving its efficiency. I know there has been no interest, both on the part of the Board and the physicians themselves.

The point that Dr. Fullerton brings up is a perfectly just one, and while I differ with him as to the obligation the law places upon the Board, because I believe it does place such an obligation, yet I sympathize with the secretary of the Board in his efforts to get evidence. Supposing a man is practising irregularly in Renville county or some other place, the secretary cannot get any evidence; he can act only after the evidence is furnished, and that should be furnished by the secretary of the county society. It is with that object in view that I introduced this resolution to make it a part of the duties of the county secretaries to keep a list of names of practitioners in their neighborhood, to report all violations of the law, and try to secure convictions before a justice court. It seems to me the State Medical Association and the State Board of Medical Examiners are absolutely independent of each other, and that is a great source of weakness. It is very difficult for the secretary of the State Board to interest the secretary of the county society. How can that condition be remedied? It can be remedied in one way only that I know of, and that is by having the secretary of the Examining Board the secretary of this Association, because in that capacity he comes in contact with secretaries of county societies. He can in that manner learn who they are that violate the law, and he can stimulate the secretary of the county society to secure evidence and make complaints. The impression I have always had is that these two organizations, the Board of Medical Examiners and the State Medical Association, are planets moving in different orbits, and never coming in contact with each other, and the only practical affiliation is affiliation through the merging of the executive officers. The state is swarming with quacks, and nobody cares a "whoop." Somebody must furnish the evidence, and it ought to be the duty of the secretary of the county society to do so. The secretary of the county society is under no obligations to the secretary of the State Board. The secretary can ask him to get evidence, and he can tell him to go further, but if he is also secretary of the State Association, and he asks a county society secretary to obtain evidence he will be more liable to pay attention to a request of that character.

The most important thing is to secure sufficient evidence to insure the enforcement of the law. If the law is worth anything on the statute books in it worth enforcing. We have got to get over this idea of asking the people to help enforce a law, and it should be the duty of the county secretary to gather the evidence

of violations of the law in his neighborhood. If we are going to have a practical and rigid enforcement of the law it can be done only by a practical affiliation of the two bodies, and the only way I can see is to have the county secretary responsible to the executive officers under the constitution.

Dr. Leon W. Hyde: I have listened with a great deal of interest to this report and also to the discussion which followed it, and from the standpoint of a secretary of a local and district society I would like to say that there is an element of difficulty in gathering evidence such as would be valuable in a court of justice, and while it seems to be true that we are nearest the source of information concerning these matters, at the same time it is not an easy thing to secure the necessary evidence. It is a very difficult matter to get a person to make a charge and to get him to go before a justice court and formally enter complaint and act as a witness. I have had two cases in the county of charlatans undoubtedly. Every evidence points to the fact that those men are not legally and rightfully qualified to practice medicine. In one case I believe a man has a license to practice in the state, but he should not have, and if the parties who are willing to run him down as a quack would be willing to go into a court of justice and give their evidence there would be a certain way of accomplishing results, but when it comes to pinning them down, and as secretary I have taken the matter upon myself, they do not care to squeal. That is the situation.

Dr. Sweeney: I would like to ask if it would not be more feasible for the county secretary to secure evidence than it would be for the secretary of the State Medical Examining Board.

Dr. Hyde: Certainly, because the matter comes nearer the county secretary than to anyone else.

Dr. J. W. Andrews: I agree with Dr. Sweeney that the State Board of Medical Examiners and this Association should move in the same orbit and move pretty closely together. I do not agree with Dr. Sweeney in the statement that he substantially makes that there is no use to try to get a better law regulating the practice of medicine than we now have. I tell you, gentlemen, it is possible, and at the very next session of the legislature an effort will emanate from Blue Earth County. Blue Earth has one senator and three representatives, and I will warrant you that those legislators will do what the physicians want them to do if it is anything reasonable. I promise you the lieutenant governor will be from Blue Earth County, and he will do what is right in that regard. If every county so-

ciety would take this matter up and take it up in earnest there is no reason why nearly twelve hundred members of this Association cannot have such legislation as they want, and I do not believe in lying down and giving up and saying we can't do it. Senator Horton is dead now, and we have him out of the way. He seemed to be a controlling element in St. Paul politics, and now that he is removed we may hope for better things from the other legislators.

I think we have a good plan in the Blue Earth County Medical Society. We have an attorney employed, and when a physician knows of the law being violated it has been our custom to make complaint to the attorney, the quack not knowing anything about it. We make complaint to the attorney, and he goes to the man and tells him to get out, and in every instance they have gone away. But here is the biggest class of quacks we have to deal with, that is, the osteopaths. We have recently had a case where one has rubbed a case of appendicitis into eternity. We had one who rubbed a case of tuberculosis into eternity. I do not know what the law is in regard to osteopathy—how much right they have to do it.

Dr. Theo. L. Hatch: I agree with Dr. Andrews, and we all know how difficult it is to convict the men under the present law. The State Board of Medical Examiners and the secretaries of the different societies may be as vigilant as they please, but under the present law it is very difficult to convict, as we all know. It is one thing to accuse a man of irregular practice, the same as any other misdemeanor, and another thing to convict. I do not believe we are going to obtain satisfactory results until we have a better law. It seems to me in order to get that better law something has got to be done, and the first thing is to get the law framed, and the second is to get it passed. We had a committee at the last session of the legislature, yet we were turned down every time, but I believe, with Dr. Andrews, that if we take this matter up, and take it into politics if we must, we can have a law enacted that will protect us.

Dr. C. H. Hunter: Has the moment arrived to ask what we are going to do about it. There is another proposition for us to take into consideration. If there are secretaries of county societies here I would like to ask how many would be willing to accept this proposition of Dr. Sweeney's. Would Dr. Sweeney make the motion that that should be a part of the duty of the secretary of the county society?

Dr. Sweeney: I believe the motion I made was that the secretary of the State Examining Board should be the secretary of the State Association.

Dr. Hunter: Would it not be better to do something instead of debating. This matter that we are debating here is in reference to the delinquency of the Board of Examiners, and not the Legislative Committee. That is another matter.

I would like to ask how much is secured by way of fines in prosecutions. Not enough to pay the prosecuting officer of the state?

Dr. Sweeney: It goes to the county treasury.

Dr. Hunter: Then nothing would be available to employ a ferret in the whole state?

Dr. Sweeney: I wish to say a last word, and that is about the amendment of the law. I have no confidence in the enthusiasm of the country practitioner in securing legislation. That has been tried, and it does not work. There are six or eight men that run the legislature of Minnesota. They are the fellows that do us up, and the country legislator has nothing to do with the matter.

In regard to the enforcement of the law, it is not always necessary to prosecute. You can scare those fellows by making a bluff at them, and all you want is a good fellow to bluff. It would not be necessary to prosecute one out of ten cases, and with the county secretary active and the state secretary active they will get out. If they find you are going to be easy with them they will stay.

The motion of Dr. Sweeney to accept the report of the committee was then voted upon and prevailed.

Dr. Hunter: How is this matter left now, with the Legislative Committee?

Dr. Sweeney: The report is accepted.

Dr. Fullerton: The way the county society can help the Board is by the way suggested, furnish direct evidence. Suppose there is a man, as a case I now have in mind and that I am going after at Lake City. The man has been practising medicine there for one or two years without a license. I have no direct evidence. I do not think I have any evidence that will stand in a court of law, but if the secretary of the county society will give me specific instances of that man's practice, namely, the names of parties who can be subpoenaed into court, then we have something to go into court with, but simply saying that "Dr. A. is practising medicine illegally and everybody knows it," is not giving us anything tangible, and we can do nothing. It is in that one thing the profession can do more than in anything else. It is true we have not much money to hire detectives to spot those men. There are no fines collected; we simply get the fees that come from examining candidates for licenses. As soon as such evidence is furnished that will stand in court then the secretary can proceed.

If the county attorney will not take it up then we can go to an attorney who will, but until we have evidence there is no use to go ahead with it.

Dr. Andrews: I would like to ask Dr. Sweeney whether he is willing to have me go before the legislators of our district and tell them they have no influence in the legislature and that their votes do not count for anything?

Dr. Sweeney: Yes, go ahead, and quote me as authority. (Laughter.)

CONGRESS ON TUBERCULOSIS

A communication was read by the Secretary from the secretary of the American International Congress on Tuberculosis inviting the Association to send delegates to the meeting of the Congress to be held in New York in November of the current year.

On motion of Dr. Thos. McDavitt, the Chair was instructed to appoint three delegates to attend the meeting of the Congress.

The Chair announced that such committee would be appointed later during the session.

SANITARY AND MORAL PROPHYLAXIS

The Secretary also read a communication from the secretary of the Society of Sanitary and Moral Prophylaxis asking that the Association adopt a resolution similar to the one following:

"Resolved, That this Association believes that continence is compatible with health, and reprobrates the contrary doctrine as a menace to the physical and moral welfare of the individual and of society."

No action was taken upon the request.

REPORT OF COMMITTEE ON NECROLOGY

The Secretary submitted the following report for the Committee on Necrology:

To the Councilors of the Minnesota State Medical Association.

Gentlemen:—I herewith present the report of your Committee on Necrology, but with the feeling that it is far from complete. Your committee has made an effort to secure data from all the county and district societies, but has had but few responses to personal letters or to the notice and request published in the association journal. Such data, however, as your committee has been able to secure I herewith respectfully submit.

(Signed) J. H. JAMES, M. D.,

Mankato, Minn.

Committee.

DR. J. W. B. WELLCOME, SR.

Born June 4, 1825, at Portland, Maine, of German and English parentage. Educated in the public schools and high school, Hallowell. Began the study of medicine under a preceptor in 1850. Moved to Stevens Point, Wis., in 1855. Settled in Garden City, Minn., in 1858. Moved to New Ulm, Minn., in 1870. Settled in Sleepy Eye, Minn., in 1875. Examining surgeon for draft at Mankato in 1862. Contract surgeon for the 10th Minn. Vol. Inf. 1863. Physician in charge of confederate prisoners at Madelia. Surgeon for the Northwestern Railroad company west of Sleepy Eye for four years. Pension examiner for eight years.

Graduate of the Physicians' and Surgeons' College at St. Louis, Mo. Charter member of Brown County Medical Society. Honorary member of the Minnesota Valley Medical Association. Member of the Minnesota State Medical Association. Died April 8, 1906, nearly 81 years of age, of cancer of the neck.

Dr. Wellcome was one of the best known physicians in southern Minnesota, and one of the oldest as well. He leaves behind him an enviable reputation, both as a physician and a Christian gentleman. His last days were full of suffering, but he bore it with manly fortitude.

DR. W. F. MILLIGAN

Dr. Milligan died in Chicago, October 1, 1905, following an operation for appendicitis.

Dr. Milligan was born in Wabasha, October 9, 1870, and was educated in the public schools of that place, and graduated from the Medical College of Ohio at Cincinnati in 1892.

The doctor began the practice of medicine either in Millville or Mazeppa (accounts differ), where he practiced until 1895, when he removed to Wabasha, his old home town, where he continued to practice his profession until the time of his death.

Dr. Milligan was 37 years of age when he died. He was prominent socially and politically, having served as mayor of his home town for two terms and one term in the state legislature in 1900.

He was local surgeon for the Chicago, Milwaukee & St. Paul Railroad, physician in charge of the St. Elizabeth Hospital, which he helped to build and maintain, and was a member of the I. O. O. F., M. W. A., A. O. U. W., and Modern Samaritans.

DR. J. P. WASTE

At 1:45 o'clock in the afternoon of April 17, 1906, at the ripe age of 69 years, Dr. J. P. Waste, of Plainview, Minn., passed to the great beyond. The funeral services were held under the auspices of the Masonic lodge at the M. E. Church, Plainview, Thursday, April 19, at two o'clock in the afternoon.

Dr. Waste located in Plainview in 1865. He was a member of the Wabasha County Medical Society and a charter member of the Southern Minnesota Medical Society, and he was an honor to the profession. He graduated from the Charity Hospital Medical College, Cleveland, Ohio, in 1865.

DR. CARLOS LORD CHAMBERS

Dr. Chambers died at midnight, Dec. 5, 1904, following an operation for an injury received the previous summer by being thrown from his buggy.

He was born near Davis, Ill., in 1858, of John W. and Nancy Lord Chambers, and came to Minnesota at an early age with his parents, who settled at Mantorville where he was subsequently educated in the public schools, entering Carleton College in 1875, from which place he graduated in 1881, and in 1883 from Rush Medical College in Chicago.

Dr. Chambers first located in Canby, Minn., where he built up a large and lucrative practice, remaining there until 1891, when he moved to Kasson, where he resided and continued to practice until his death.

He was a resolute, resourceful, and high-minded man who inspired immediate and lasting confidence. His professional career was one of ceaseless activity and untiring devotion to those who sought his help, never shirking a duty, slighting a patient, or sparing himself. He was a member of the Kasson Board of Education, which position he filled for several years before his death. He was straightforward, manly, and helpful in every walk of life, with high ideals and splendid attainments, and he filled a large and enviable place in the community. He was a member of the Congregational Church at Northfield, which he joined while a student at Carleton College, and retained his membership until his death. He was also a member of several fraternal and benevolent orders, and of the Southwest-

ern and State Medical Associations, from whose councils he will be sadly missed.

DR. GEORGE NAPOLEON WATIER

A charter member of the Washington County Medical Society, and a member of the Minnesota State Medical Association, Dr. Watier died in his office at Stillwater, on May 1, 1905. Dr. Watier's death was sudden and shocking, being due to accidental carbolic acid poisoning. He was born at St. Anicet, Province of Quebec, Canada, Dec. 24, 1850, and was of French extraction.

After some years his family moved to Montreal where George took a course in the commercial college. At the age of 28 he entered Victoria College, affiliated with Cobourg University, where he studied medicine, and was graduated in 1883.

After his graduation Dr. Watier did not immediately devote himself to the practice of medicine, but engaged in business with the Citizens' Insurance Company, of which concern he became assistant manager.

On May 3, 1895, he came to Stillwater, Minn., where he located to practice his profession and was so engaged until his death. He was also coroner of Washington county.

The doctor was a member of the French Catholic Church and of several fraternal organizations. He was a brother of Dr. O. A. Watier, who practiced in Stillwater for ten years, and died in 1891. Dr. Watier was a man of decided optimistic temperament and one who readily made friends. His wife survives him.

DR. FRANKLIN STAPLES

Dr. Staples died at midnight, February 23, 1904, at his residence in Winona, where he had lived and practiced medicine for nearly half a century. He was born at Raymond (now Casco), Maine, on the 9th of November, 1833, and was a son of Peter and Sarah (Maxwell) Staples. He was educated in the common schools at Buxton and at Parsonsville Seminary and at Limerick and Auburn Academies.

He studied medicine in 1855 in the office of the eminent Marine Hospital surgeon, Dr. Charles S. D. Fessenden, of Portland, Maine, taking lectures in Bowdoin College and at the Portland School for Medical Instruction. While continuing his studies under Prof. W. C. Robinson and Israel T. Dana he was for four years principal of the Boys' Central Grammar School of Portland, and at the request of his old pupils, in 1900, the name of the school building was changed to "Staples School."

In 1861 he became a student at the College of Physicians and Surgeons, New York City, from which he received his degree of M. D. in 1862, and while continuing his studies as assistant to Dr. David Conant he went as demonstrator of anatomy to the Maine Medical School (Medical Department of Bowdoin College).

In the summer of 1862 he moved to Winona, and commenced active practice with Dr. John Ford.

Dr. Staples was a charter member of the Minnesota State Medical Society, and was chosen as its second president in 1871. He was a member of the American Medical Association, and of the American Public Health Association, serving on its judicial council from 1875 to 1877, and as vice-president in the latter year.

In 1874 he was appointed a member of the Minnesota State Board of Health, and was subsequently elected its president, which position he continued to fill until the time of his death.

Dr. Staples was Professor of Practice of Medicine in the Medical Department of the University of Minnesota when the faculty constituted the State Medical Examining Board. He assisted in the organization of the Winona County Medical Society, and was its first secretary, in 1864.

He was the first president of the Southern Minnesota Medical Association, organized in 1892, and held

the position of Health Officer of the city of Winona for nearly a quarter of a century.

He also held the position of district surgeon for the Chicago and Northwestern railroad for nearly thirty years.

He was surgeon and medical referee for some of the leading life and accident insurance companies, and for several years was United States Pension Examiner and held other important offices.

Dr. Staples was known especially by his studies and practical work as a surgeon, and by his writings on surgical and hygienic subjects published from time to time in the scientific and professional journals, these marking him as a man of culture, science, and ability. His energy was not confined entirely to his profession, for he was interested in religious and educational questions. He was eminent as a physician and surgeon, and successful; and as a man he was liberal minded, social, and hospitable. In his family he was everything that is kind, loving, and generous.

As a man of science in his profession, as a promoter of advanced education, as a citizen of affairs, as a Christian gentleman, he has been an ennobling example and power in the state of his adoption and in the community in which he lived.

DR. CARL O. BENDEKE

Dr. Bendeke graduated from Rush Medical College, in 1870, and settled in Rushford, Minn., the same year. He moved to Minneapolis in 1877, and died January 1905, aged 65 years.

DR. O. WELLINGTON ARCHIBALD

Dr. Archibald was born November 25, 1851, at Stillwater, Nova Scotia. He graduated in medicine from Keokuk Medical College, 1871, and as a post-graduate from St. Louis in 1873. He was post-surgeon, Baker, Montana, 1874; six months in Bellevue Hospital, New York, 1875; post-surgeon, Fort Keogh, 1876; contract surgeon Fort Abraham Lincoln, 1882; superintendent State Hospital for the Insane, Jamestown, N. D., 1885 to 1896. He located in St. Paul in 1896, and died July 27, 1905.

DR. QUINCY ADAMS VALE

Dr. Vale died the 2d of September, 1903. He was born August 12, 1825, in Columbiana County, Ohio. Dr. Vale commenced practice in 1850 in Meigs County, Ohio. In 1855 he came to Minnesota, and located at Pine Island. In 1861 he moved to Homer, Winona County, where he resided until his death. He assisted in the organization of the Winona County Medical Society, in April, 1869, and retained his membership therein during the remainder of his life.

Dr. Vale was a member of the House of Representatives of the eleventh legislature of Minnesota.

DR. W. C. VOIGT

Dr. Voigt died at the City Hospital, Stillwater, Minn., Nov. 3, 1905, after an illness of twelve days with apoplexy. He was one of the charter members of the Washington County Medical Society, organized September 25, 1902.

Dr. William C. Voigt was born at Stolp, Province of Pomer, in northern Prussia, June 9, 1847. His father was a blacksmith, and the family lived on a farm. They emigrated to the United States in 1856, and located at Kankakee, Ill., where they engaged in farming. During his boyhood William attended the public schools and worked on his father's farm. At the age of 22 he went to California, where he remained twelve years. He is said to have been engaged in mining part of this time. He studied medicine in the University of California, and was graduated in 1879.

For about two years he practiced medicine in Grass Valley, Cal., and removed in 1881 to Stillwater, Minn., where he subsequently engaged in the practice of his profession up to the time of his fatal illness, being also interested part of the time in mercantile pursuits. He

was the health officer in 1895-96. In 1895 Dr. Voigt was married to Mrs. Elizabeth Maurer Fritschie, of Stillwater. He is survived by the widow, four brothers and two sisters.

His unassuming manner, integrity, and professional ability had won for him the respect of his professional brethren of the community in which he lived.

DR. HENRY BREWSTER ALLEN

Dr. Allen died at Cloquet, Minn., July 24, 1905. Dr. Allen was born at Burlington, Iowa, September 24, 1861. He graduated from Jefferson Medical College, Philadelphia, in 1882, after which he practiced medicine at Woodlawn, Kansas, for six months, when he moved to Cloquet, where he continued to practice until his death.

In January, 1905, he contracted a severe cold, which soon developed into consumption, from which he died.

Dr. Allen was a member of the St. Louis County Medical Society.

DR. THOMAS SULLIVAN

Dr. Sullivan, the well known and esteemed physician of Springfield, Minn., died at his home November 9, 1905, of nephritis and heart disease.

Dr. Sullivan was born at Petersboro, Canada, September 7, 1857. His preliminary education was obtained at the Petersboro High School and St. Michael's College, and his medical education at Trinity University College of Medicine, from which school he graduated in 1879.

The doctor practiced medicine from 1880 to 1882 in Sharon, Penn., when he moved to Springfield, Minn., where he continued in his profession until his death.

He was one of the charter members of the Brown County Medical Society, and will be missed at its future gatherings.

DR. HARRY SCOTT VERNON

Dr. Vernon died at Rushford, Minn., Feb. 1, 1904. He was born at Sonora, Ohio, September 22, 1872; was graduated from Rush Medical College in 1900; and after serving two years as house surgeon in Chicago hospitals he located in Lewiston, Winona County, Minnesota, from which point he afterward moved to Rushford, Fillmore County.

Dr. Vernon became a member of the Winona County Medical Society on the 7th of October, 1902.

DR. NATHANEAL STACY TEFFT

At the ripe age of seventy-four and one-half years, on the evening of January 20, 1905, Dr. Tefft answered his last call on earth. He was born in Hamilton, Madison County, New York, July 16, 1830. Later his parents moved to Mayville, in the same state, where his youth was spent. He received his preliminary education in the schools of that place and in Fredonia and Panama. He began his medical studies with a local physician, as was customary in those days, graduating from the Bennett Medical College with honor in the winter of 1852, locating in Sherman, New York, where he practiced four years. He came to Wabasha County, Minnesota, in the spring of 1856, where he practiced medicine five years, also serving as postmaster and justice of the peace during the greater part of that period.

In 1857 he was elected to the lower branch of the Minnesota legislature, and again in 1865.

In that same year he moved to Plainview, where he continued to reside until the time of his death.

In 1871 he was sent to the state senate, and during his term of service he was on several important committees.

He was a member of the board of trustees of the St. Peter Hospital for the Insane in the 70's, and for many years a member of the State Medical and the American Medical Associations. He was a member of the Wabasha and Olmsted County Medical Societies,

and one of the organizers of the Southern Minnesota Medical Association.

Dr. Tefft was also a member of the Odd Fellows' organization. His death leaves a void in the community and in the medical ranks, and his patients and confreres will miss his cheerful and wise counsel.

His faithful wife, who was his constant companion and stimulus for thirty-eight years, still survives him. He leaves no children, the only son born to him having died in infancy.

May we all deserve the respect and honor granted our noble departed brother in this world, and in the hereafter may we too hear the plaudit, "Well done, good and faithful servant."

DR. EDWIN D. STEEL

Dr. Steel died at his residence, in Mankato, Minnesota, on the morning of September 21, 1905, while in a state of uremic coma, at the age of 43 years.

Dr. Steel was born in Nicollet County, Minnesota, June 14, 1862, and lived on a farm until his majority, attending the country schools, but graduating from the State Normal School at Mankato in the year 1883, after which he taught for two or three years.

He began the study of medicine with Dr. J. W. Andrews, of Mankato, and graduated from the medical department of the University of Minnesota in 1889, having served as interne in the City Hospital of Minneapolis and as a physician for a construction crew of the Great Northern Railroad during his vacations.

In 1889 he entered into partnership with his preceptor, and continued with him for two and one-half years, when he opened an office by himself, and so continued to practice until his death.

By strict attention to business, together with skill as a physician, a modest demeanor, a cheerful and optimistic disposition, and friendliness to the sick and suffering, he built up a large and enviable practice.

He was a member of several fraternal and benevolent organizations, for some of which he became medical examiner, as well as examiner for several old-line life insurance companies. He held memberships also in the American Medical Association, the State, Southern Minnesota, and Minnesota Valley Medical Associations, serving the latter as its secretary for many years. At the time of his death he was president of the Blue Earth County Medical Society.

No formal action was taken upon the report of the committee, but the chair announced that the report would be published in full in the Transactions.

STATE JOURNAL

Dr. Sweeney: I would like to hear the report of the committee that was appointed to consider the advisability of publishing a state journal.

Dr. Fullerton: Dr. Workman, the chairman of that committee, is not present, and I would ask until Thursday to make that report, and I would also ask that it be made a special order of business for Thursday. I do not know what Dr. Workman has done as chairman, but I know what I have done, and if he is not present when the report comes up I will make a report. I would like to ask that it be made a special order of business at that time.

On motion of Dr. McDavitt the report was made a special order of business immediately after the first order of business Thursday morning.

TIME OF MEETINGS

Dr. J. W. Andrews submitted the following resolution:

Whereas, The American Medical Association holds its annual meeting the fore part of June in each year, when it meets north of Mason and Dixon's line, and at least four out of five years it does not meet north of this line; and

Whereas, Many members of the Minnesota State Medical Association attend the annual meeting of the American Medical Association, and because of cheap rates and other advantages select that season of the year for their annual outing; and

Whereas, For these and many other reasons a number of our members are prevented from attending the Minnesota State Medical Association, when said annual meeting is held in June; therefore

Resolved by the House of Delegates of the Minnesota State Medical Association, in regular session assembled: That hereafter the annual meeting of said Association shall be held some time between August 15 and September 15 of each year, provided, however, that the time may be changed for any one year by a two-thirds vote of the House of Delegates, such action being ratified by the Association.

Dr. Andrews moved the adoption of the resolution.

Dr. McDavitt: I would like to ask Dr. Andrews if it would not be preferable to put it even a month later. Frequently September is a most uncomfortable month, as far as heat is concerned.

Dr. Andrews: I have not the least objection to that. I came pretty nearly making it October. Speaking to the resolution, I feel that this ought to pass. As stated in the resolution, it is the season of the year when many of our physicians and their families seek an outing. They go the American Medical Association because they know the rates are cheap and the entertainments are many, and many that go with their families remain three or four weeks, sometimes longer, and where it is so far away as it was this year and will be next year it makes it difficult for a physician to get back in time to attend this meeting, even if he does not extend his stay. I know two physicians in Mankato who would like to be here, but they have not yet returned. I think it would be a wise thing, in order to increase the attendance, to change the time of meeting to the fall of the year.

Dr. E. J. Abbott: I think this would be a good plan, but I have not had time to think it over. I think it would be a good plan to let this go over another session to give us time to consider it.

Dr. Fullerton: I think you will find in the Constitution and By-Laws that the matter of setting the date of the annual meeting lies in the hands of the House of Delegates. The reason why this meeting was called for the third Wednesday in June will appear later in the session. It is that our acts at this meeting may

finally go before the general assembly for ratification in order to comply with our act of incorporation.

Dr. Andrews: It will be observed that the resolution provides that the House of Delegates, ratified by the State Medical Association, can change the time of meeting any one year, but it seems to me it would be wise to have a fixed time for our meeting.

On motion of Dr. Andrews the consideration of the resolution was made a special order of business for Thursday morning.

STATE BOARD OF MEDICAL EXAMINERS

Dr. Arthur Sweeney submitted the following resolution:

Resolved, That it be the duty of the Legislative Committee to select each year a list of regular physicians to be submitted to the governor of this state as representing the choice of the State Medical Association for appointment on the State Board of Medical Examiners.

On motion of Dr. Sweeney the resolution was unanimously adopted.

INSURANCE EXAMINATION

Dr. J. W. Andrews also submitted the following resolution:

There are many widows and orphans and many poor people to whom physicians cheerfully minister night or day, in clement or inclement weather. To such, physicians give their time and services without the hope or expectation of reward.

Persons applying for life insurance are as a rule in good health; they have an earning capacity. Many take out life insurance as an investment as well as a protection. The insurance companies which assume the risk do not want and cannot afford to take poor risks. This would be an unjust loss to the companies and an injustice to the other policy holders. Insurance companies have a right to expect a thorough, careful, and honest examination, therefore

Resolved, by the House of Delegates of the Minnesota State Medical Association, in regular convention assembled, That we hereby pledge ourselves to exercise skill and care in all examinations for life insurance companies.

Resolved, That we hereby pledge ourselves to adhere strictly to the following schedule of fees for life insurance examinations:

\$5.00 for each and every ordinary examination, including chemical analysis of the urine.

\$10.00 for each and every examination where a microscopical examination of urine, sputum, or other secretion is required.

\$3.00 for each certificate of health for renewal of a lapsed policy.

Resolved, That we do not believe any examination for life insurance is complete without the examination of the urine of the applicant, and we are unwilling to make any recommendation on an incomplete examination.

Resolved, That these resolutions be presented to the general session of the Minnesota State Medical Association for ratification, provided they pass the House of Delegates.

Resolved, That these resolutions shall go into effect and be morally binding upon the members of the Minnesota State Medical Association on and after thirty days subsequent to their adoption.

Resolved, That the Secretary shall within said time

send a copy of these resolutions to every insurance company doing business within the state of Minnesota.

Resolved, That we do not recognize fraternal societies as insurance companies, therefore these resolutions do not apply to them.

Dr. Andrews moved the adoption of the resolutions.

Dr. C. A. Stewart: I wish to move to strike out that portion relating to fraternal organizations and let them come in on the same basis as life insurance companies. I would also like to make an addition to the effect that when examinations are made for accident companies and reports made to the company in relation to the character and extent of the injury sustained by some claimant, that the fee be not less than five dollars for such service.

Dr. Andrews: With the consent of the second I gladly accept both of those amendments. It was a question with me what to do with fraternal organizations. I do not examine for any of them.

The Chairman: I think it might be well to discuss this feature of the matter. It seems this question of fees is being discussed all over the state. I have no doubt some of you are from local societies where this thing has been threshed over, and you are prepared to say something. I would state that our society, the Camp Release, has taken this position: A fee of five dollars shall be the minimum fee for examinations limited to old-line companies. We have said nothing about fraternal society insurance for the reason that very often, especially in country towns, where a local society has sprung up in the village, the physician would like to have a different price, but the society is organized for the benefit of the local families and for their relief in case of death, and the family is perhaps wholly dependent, and it is a matter that ought to be left largely to the local physician. I think he would be willing to make the examination locally at a reduced fee, but it seems to me that for the old-line companies in this state, whether they originate within the state or whether they come in from abroad, there should be some fixed fee. There should be some fixed minimum fee, but what that should be is the great question. I believe it would be wise to leave out the local fraternal societies. It may affect one man in one way and another in another way. Take it in our town: I would not feel like charging the members, say of the Woodmen, the same as I do for old-line insurance examinations. A man taking out old-line insurance is usually pretty well fixed, while the man who has fraternal insurance is probably dependent on his daily labor. I believe it is our duty to make a distinction between fraternal organizations and old-line companies. I would like to have the Secretary read what the

Camp Release Society has done. It covers the same ground Dr. Andrews has gone over.

The secretary then read the following copy of an agreement relative to insurance examination fees sent to members of the Camp Release Medical Society for signature:

MONTEVIDEO, Minn., May 7, 1906.

Dear Doctor:

As you are doubtless aware, "old-line" life insurance companies have been cutting the fees paid to their medical examiners for examination. This is an injustice, and not justified by the plea of economy, as recent investigations fully demonstrate. This matter has been discussed at several of our society meetings, but no action was taken. At the last meeting held May 3d, at Madison, the subject was brought up again and after thorough discussion the following resolution was unanimously adopted:

Resolved, That the fees for life insurance examinations made by members of this Society after July 1, 1906, shall be as follows:

Five (\$5.00) dollars for each ordinary examination, including urinalysis.

Ten (\$10.00) dollars for each examination where microscopical examination of urine, sputum, or other secretion is required.

Three (\$3.00) dollars for each certificate of health for renewal of lapsed policy.

That each member sign the enclosed agreement and return it to the Secretary, together with the names and post-office address of the life insurance companies for which he examines, and

That the Secretary inform each company so reported of the action of this Society.

The delegates to the State Association were instructed to urge a like action of that body at its next meeting.

By united action we can prevent this injustice on the part of rapacious insurance companies. Medical societies throughout the country are taking this step. Let us fall in line, and help the good work along and incidentally help ourselves.

The above fees need not be followed in examinations for fraternal societies or lodges.

Please sign one of the enclosed agreements, and send it to me together with the names and addresses of the insurance companies for which you examine. Retain the copy for reference.

Fraternally Yours,

(Signed) R. D. ZIMBECK,
Secretary.

Dr. Hunter: Have all the members signed that agreement?

The Chairman: At the meeting of May 3rd this resolution was passed unanimously, and was signed or agreed to be signed by all the physicians present, and it is my impression that every member of our Society of nearly sixty members has signed that agreement. If they did not sign it at the time of the meeting I presume they have signed it by this time as it is to be effective July 1st.

Dr. Hunter: Would it not be well to wait and see what the insurance companies, such as the Equitable and other large companies, are going to do? So far as I have learned and noted by correspondence there has been a good deal of kicking on the part of doctors. If we are prepared to raise the fee, and successfully, I am willing to see what can be done. So I

think it would be well to see what they will do in the matter.

Dr. G. S. Wattam: As a country physician who has had some experience with life insurance examinations and examinations for fraternal organizations, and in watching the effects of laws passed by a local society, I want to say just one word, and that is that I am in favor of Dr. Andrews' original motion. I believe as it stands to-day in examining for the old-line companies we are examining for the companies, and in examining for fraternal societies we are examining for our friends and neighbors. We are appointed by the lodges, the members of which are our friends and neighbors. If we pass the resolution as it is proposed to amend it we will do this: we will throw that work entirely into the hands of those outside of the State Medical Association, and we shall simply be playing into their hands and thereby lose the sympathy and co-operation of our friends and neighbors. Our society, the Red River Valley, has fixed a fee of five dollars for old-line companies and three dollars for fraternal organizations. What was the result? In our town we ought not to charge that fee because there were only three of us. In towns along the railroad where there were four or five it simply means that it becomes a handle with which to use the axe to chop off our practice among friends and neighbors. The local medical examiner is "knocked" by his friends in those societies.

Dr. E. J. Abbott: I like to get a big fee as well as anybody, and I know you are always glad to get it, but I don't see why we should charge more for the old-line companies. It does not take more time, it does not require any more skill, it does not have to be any more thorough; and the companies have decided to cut down their fees and not allow any more. If the examiner will not examine for the old fees the agent has got to go down in his jeans and pay the difference. I have no objection to taking his money, as well as that of anybody else, but I do not see why a man should be allowed to examine for a lodge at two dollars, or one dollar, or even fifty cents, and then compel the rest of us to decline a three-dollar fee because it is not five. It seems to me we ought to be left to do as we please, and if we want to make an examination for three dollars we ought to have as good a right to make it as anybody else.

Dr. C. A. Stewart: I offered the amendment I did in accordance with instructions from the St. Louis County Medical Society. The society has discussed the matter thoroughly, and has adopted a schedule of fees based practically on that stated in the resolution, with the exception that we advise a three dollar fee for ex-

amination without urinalysis, and that would apply to fraternal as well as to straight life companies. We make no fraternal examinations less than any others. We made a fee to the Woodmen a few years ago, but now there is at least four times the clerical work there is, in an old line examination, and it does not seem to me there is any good reason for making a fraternal examination at a less price simply because the members happen to be friends and neighbors. The medical profession should be a body of educators, and should not give the impression that fraternal insurance is not insurance and does not amount to anything.

Dr. T. L. Hatch: When they sent that letter to Dr. Andrews and to you and to all of us, and requested us to make those examinations for three dollars it was practically an ultimatum. Dr. Andrews was right when he said that if we could unite the profession of the state and of the entire country to adhere to the resolution we could bring them to time. But Dr. Andrews knows that in his town and in every town there are plenty of men who will make those examinations for three dollars. When I received that letter my first impulse was to simply give them to understand I would not do it. On second thought I knew there were men in my town who would make the examinations for that price and I might as well have the money as anybody else. I like big fees as well as anybody, but I can make those examinations for three dollars. They will get men to do it, but whether they will get good men, is another question.

Dr. Andrews: I would like to speak another word upon the resolution as the introducer of it. I think many of the remarks made are timely and practical. It is important to the medical profession that these resolutions are adopted; it is important to the medical profession that they know what they are doing. It would be unwise to pass these resolutions, and then not have them lived up to. I think Dr. Cummings will remember that a few years ago the matter came up in the Minnesota Valley Medical Society, and the motion was made and passed, and we agreed as a society that we would not make any examination for less than two dollars. Some one got up at that time the same as they have gotten up here to-day and took the position that if we adopted that resolution the physicians would not live up to it, and hence we did not adopt it. I arose and made this declaration, that I would either live up to it or I would leave Mankato, and I am still at Mankato. All the fraternal companies left me because I would not do it for less than two dollars, and some came down to fifty cents. Three months ago I introduced that in the county society that we would not

make fraternal examinations—the old-line companies were not included—for less than two dollars. Some of our members squirmed a little, some that were making examinations for fifty cents, and said that fifty cents did not mean much, but it brought them business. However, the schedule was unanimously signed by every regular and homeopathic physician in Blue Earth County. Is this our position to-day in regard to fraternal insurance?

In reference to Dr. Stewart's remarks I would say that personally I do not feel it would be quite wise for the medical profession to charge five dollars and not less than five for fraternal examinations. I would rather examine for old-line than for fraternal organizations, and I will admit it is more work to examine for fraternal societies, and I admit that we can come up to them in a year or two, but if these resolutions were passed as they are now I believe physicians would live up to them. I received letters lately, and one letter I read very carefully, and it was this: "We will pay you so much. We want to re-appoint you as examiner for our company in Mankato, and we will pay you so much per thousand in fees. We will use our influence to get other companies to employ you. Sign this contract with two witnesses, and return." You see what that meant. It was a next year's contract with two witnesses that I would make their examinations so and so. I wrote them as polite a letter as I could saying I would accept the position as examiner of the company on the following conditions, that I would examine according to their fee-bill until such time as the Minnesota State Medical Association would adopt a fee-bill for life insurance examinations, and that I wanted it understood that when such action was taken my contract with them was ended. I got a letter thanking me for my acceptance, but urging me to use my influence in the State Medical Association to have no such resolution passed. It would be the greatest absurdity to ask the companies what they think about it. On the same basis let us go to some of our millionaire patrons and ask them how much they will pay us to have their wives confined! Let us make a reasonable price, and then stay by it. That is what this Association ought to do, and I hope they will do it. Talk about them not being able to stand it! Hyde spent \$100,000 for one banquet, and then the poor doctors should not ask a fee of more than three dollars.

Dr. T. L. Hatch: Have all the members of Blue Earth County signed it?

Dr. Andrews: They have all signed it.

Dr. E. J. Abbott: I have been examiner for the Penn Mutual for twenty-five years, and the fee for examination on a policy of

\$1,000 without urinalysis is three dollars, and where urinalysis is required the payment is five dollars, and I do not propose to throw them down after this length of time, and I shall continue to examine at that price no matter what the Association may do.

Dr. C. A. Stewart: In reply to the last gentleman I wish to say that I have examined for the Penn Mutual for twenty-six years, and I had a communication from them the other day asking me to make no further examinations for policies for \$1,000 or less as action had been taken in several states to the effect that no examinations would be made for less than five dollars. Go home and accept the situation without question. Insurance companies are not looking for poor men. They want good men, representative men, because very often the character of the examiner determines the company in which the insured take out a policy. I know that; I see it every little while. To go back to the amendment Dr. Andrews accepted, the amendment to make the fraternal fee three dollars; personally, I do not care anything about that, but I would like to have the laws with reference to examinations in case of accident retained.

Dr. J. H. Stuart: I think as far as the old-line companies are concerned five dollars is as small a fee as we ought to charge. I think we ought to express ourselves on this matter. As far as any action in regard to fraternal companies is concerned I do not think it would have any effect at all. In the first place the price for examination is not fixed by the local agent, it is fixed by the organization, and it is two or three dollars, or whatever it may be fixed at, and if we say that our practice is such and our fee is such that we cannot do it it will not be done by us, but somebody else will do it. Out of respect and deference to a class of people who can take but a little insurance and pay a small fee for it, it is our duty as physicians to meet them and help them along with their little insurance, and I believe the best course for the House of Delegates to take is to leave this question alone and leave it with every physician in a town where these organizations exist.

Dr. A. E. Spalding: This is a question that has agitated the southwestern county societies, and physicians, regular and homeopathic, have signed an agreement agreeing to make no examination for less than five dollars for old-line companies. Nothing has been said in regard to assessment companies. I think it would be an injustice to charge the poor man five dollars for an examination. While I admit that the work is a great deal harder,—more questions have to be answered and it requires a great deal more of clerical work,—yet as I

say it is an injustice to the poor man to charge him five dollars. He has to pay that out of his pocket, while the old-line companies pay the five dollars. In our part of the state we are going to hold to it.

Dr. J. W. Robertson: I have made examinations for three old-line companies for years, and I also examine for the Penn. Not many months ago they sent me a check for nine dollars, three dollars each for three examinations. I returned the check, and said my fee was fifteen dollars and I got a check for fifteen dollars. (Applause.) You will get it every time you go after it. I returned a check to the New York Life, and said my fee was five dollars and I got five dollars, and you will get it every time you demand it. (Applause.) The instructions from the Meeker County Society that I bring with me ask the State Medical Association to pass a resolution requiring a fee of five dollars for old-line examinations. We should settle these points ourselves; we should not allow anybody to come in here and tell us what we must do or must not do. We have a nice osteopath in our town. They can go to him if they want to. The other physicians have signed for a five dollar fee, and they are going to stick to it. I am secretary of the Meeker County Medical Society, and I will guarantee that every man in our county will sign that fee bill requiring five dollars for a medical examination. I think we ought to make it stronger; we ought to be allowed to expel a man who will take a fee of less than five dollars. (Applause.) That is what I am here for, to have it made a matter for expulsion from a medical society to have a man accept a fee less than five dollars for a medical examination for life insurance. That is the way to get at them. If you charge the fee you will get it. (Applause.)

The Chairman: I want to say just a word along the line the doctor has spoken. We do not impose any penalty in our society, but we leave it to the honor of the physician who signs the agreement, but this matter of a penalty will probably be taken up later in case the agreement is violated. It was suggested there as it was here that if a physician violated his agreement he ought to be subject to expulsion from the society, but I urged that no such action be taken at that time, for I believed that every member of our society would live up to the agreement. They were unanimously in favor of the resolution that was read here to-day. I think we shall make a serious mistake if we incorporate into this kind of an agreement the article on fraternal societies. In a good many of the smaller villages it would act as a bar to a good many to become members of such organizations. They could not

pay the fee. Many have a struggle to pay the fees for examination and the lodge fees, and they are pretty thoroughly burdened as it is. It ought to be left to the medical profession to make such charges as circumstances seem to demand. I would be in favor of leaving out fraternal societies and passing the resolution simply with reference to old-line companies.

Dr. C. A. Stewart: If the local physician wants to be truly charitable he will advise the applicant to put his money in a savings bank.

Dr. W. L. Beebe: I would like to report the action of the Stearns County Society. They have signed an agreement. I believe they signed an agreement to make no examination for less than five dollars. I am a little astonished at the attitude of some men in this House of Delegates. They have said virtually that whatever action this Association may take in regard to this matter they will not abide by it. If this is true there is no need of passing any resolutions such as are before the House now. One man has openly voiced that sentiment, and one or two others have virtually expressed the same thing. I would like to ask the doctor whether if those old-line companies were to pay him five dollars that now pay him three dollars whether he would abide by that.

Dr. F. A. Knights: I have only a few words to say on general principles. I do not think there ever was an attempt made to fix a fee-bill—there never has been an attempt to raise a fee that we did not hear the same kind of talk we have heard here this afternoon: "If I do not do it cheaply somebody else will do it." and that looks to me like laying down a full house because they are not four aces. (Laughter.) There is no question but that we will get the fee if we hang together. In regard to this insurance: so far as fraternal insurance is concerned, it is rather on a different basis. It is true the work is practically the same, but we are doing work for people every day in accordance with their circumstances. The people who are in the fraternal insurance companies are not able to pay, although they would be glad to pay if they had the money. It seems to me that possibly the fee might be raised a little bit; it might be raised to two dollars for fraternal insurance because that is not enough to make any fuss about. Fraternal insurance is cheap; they take in almost anybody, and a physician gets more knocks for rejecting a man than he does for accepting a hundred at a dollar apiece. Personally I would be glad to let it go, and if the companies have cheap men let them have the fees. I do not think it would make much difference whether a physician examines for a fraternal society or not. If he wishes to have social standing, let

him attend their meetings and become a member, but let him give them to understand that he is not a cheap man and will not make the examination at the cheap price, and we will get the same benefits that we do if we do examine. I happen to belong to some fraternal insurance companies and other orders, and the business that comes to me from other orders is more desirable than anything I get from fraternal orders.

Dr. Wm. Davis: I do not know just what was said at the beginning because I came in late. I am not willing to have it thought that Dr. Abbott voices the sentiment of the Ramsey County Society in what he has said. This goes down deeper than anything that has been said. If we cannot accomplish anything in just such a matter as this, of what use is this organization to the profession? This is the first time we have put our organization to the test. If we cannot get together and fix this fee at five dollars, and get the men of the state to agree we might as well drop the organization altogether and confess that our work has been a failure. I hope the delegates will look at it from that standpoint, and will not think of taking the attitude that one man has taken to-day, that if we do not do the work somebody else will. We can never accomplish anything unless we stand shoulder to shoulder, and stick there. (Applause.) I hope the delegates will keep that in mind when they vote on this question.

A vote was then taken upon Dr. Stewart's motion to amend, and the motion was declared lost.

Dr. C. H. Hunter: Ought we to instruct insurance companies what they require of us? Some insurance companies for some policies do not ask an insurance examination. We are instructed here to demand that, to demand the examination, and then to charge a price for it. Is that exactly what we want to do?

Dr. Andrews: That is exactly what we want to do. In other words, what we do we want to do right. If some snide insurance company says we need not examine the urine we are responsible to that company and its policy-holders, and in every examination we ought not to make any recommendation until we have made an examination so that we meant what we said. (Applause.)

Dr. Hunter: There are some companies that are not snide companies that do not require that.

Dr. Andrews: Well, I think I will cut that word out.

Dr. Hunter: I think we do put in a minimum fee, but we might put in a fee of twenty-five. These resolutions ought to be carefully considered. There are some things I cannot approve of.

Dr. Andrews: While I am on my feet I wish to offer an amendment. I move that if these resolutions pass the Secretary notify the companies who are doing business in the state of Minnesota, and that he be authorized to cut out the preamble and also the reference to fraternal organizations.

The Chair announced that such would be taken as the action of the House.

Dr. Hunter: I would not try to change the policy of the company I am trying to do business with. Insurance directors are not less wise than we are.

Dr. C. A. Stewart: An examination without the urine amounts to a certificate of health.

A motion by Dr. Hunter to refer the resolution to a committee of three for consideration, to report at the Thursday morning session as the third order of business, was lost.

The Secretary then read the resolution as amended.

Dr. Schultz moved that the word minimum be inserted before the fee designations.

Dr. Andrews accepted the amendment.

The original motion of Dr. Andrews was then put to a vote, and the resolution was unanimously adopted as amended.

The President having arrived, the chairman, Dr. Jones, retired and Dr. C. H. Mayo assumed the chair.

UNPROFESSIONAL CONDUCT

Dr. D. B. Pritchard: At the January meeting of the Winona County Medical Society one of the members preferred charges of alleged unprofessional conduct against one of the other members of the society. The misconduct was this: Dr. — had a card in the newspapers in which his name appeared in large letters and the word physician in small letters, and below was the word specialist in large letters. This member objected to the card, and preferred charges in the county society. The councilor of the district happened to be present at the meeting, and he and one other member of the society thought the thing to do would be to use moral suasion with the gentleman and have him withdraw the objectionable advertising. They saw the man accused and talked with him. The president of the society had a talk with him, and the member of the board of censors had a talk with him, but all to no effect. The matter was referred to a committee, and they presented a divided report, and the county society instructed the delegate to present the matter to this body and ask them for a ruling. They sent the correspondence to the national association to the judiciary committee, and they said it was a matter for the local society to settle. I would like to ask whether it is right and proper for a

man to run a card like that while he is a member of the society.

Dr. Andrews: I am exceedingly glad this matter came up because I believe it fits a great many cases. I am a little surprised that the code of ethics of the American Medical Association did not touch upon this point, for it is a violation of the ethics of the medical profession to advertise in that way or in a way that gives one an advantage over his fellow physicians. That same thing has occurred a number of times in our society. We have tried to get a communication from the organizers, and we have succeeded in getting one from Dr. McCormack which does not quite cover the case. I would like to have this matter finally adjusted.

On motion of Dr. Wm. Davis the entire matter was referred to the Council for adjudication.

Dr. Andrews: Do I understand that the Council will report its action to the House of Delegates?

The President: Yes, sir.

MEMBERSHIP CARDS

Dr. D. N. Jones: I am requested by the Camp Release Society to bring before the House of Delegates the matter of issuing membership cards. I believe it would be a good thing for the State Association to issue a card similar to that issued by the American Medical Association to carry in one's vest pocket to show that one is a member of the state society. I was asked to bring this matter before the House of Delegates for action.

Dr. Fullerton: Membership in the county society carries with it membership in the State Association, and if a man does not pay his dues what are you going to do about it? The card shows he is a member when he is not.

Dr. Jones: The card would be issued only for the time that he is a member.

On motion of Dr. Hunter the secretary was instructed to issue such cards to take the form of a receipt for both county and state fees.

CONTRACT PRACTICE

Dr. Sweeney: I would like to have the Secretary read the resolution adopted at the last meeting of the Association with reference to contract practice.

The Secretary then read Sections 15, 16, and 17 of Chapter IX of the By-Laws.

Dr. Sweeney: I wish to give notice that I will make a motion to repeal Sections 15, 16, and 17 of Chapter IX of the By-Laws at the next session.

Dr. Hunter: Relative to the same matter, I would be glad to have Dr. Barton read the resolution passed by the Hennepin County Medical Association.

Dr. Geo. C. Barton then read the following resolution:

The following is a copy of a resolution unanimously adopted by the Hennepin County Medical Society at its meeting of May 7, 1906:

"Resolved, That our delegates to the next meeting of the State Medical Association be and are hereby instructed to call the attention of the House of Delegates to the evident discrimination against lodge physicians and in favor of corporation surgeons, as incorporated in the By-Laws of the State Association, Chapter IX, Section 15, and that our delegates be further instructed to propose such action in the House of Delegates regarding the matter as seems best to them at that time.

(Signed) C. H. BRADLEY,
Secretary."

In order to bring the foregoing matter before the house, on motion of Dr. Fullerton it was decided to have an evening session of the House of Delegates to begin at eight o'clock.

On motion of Dr. Cummings the House adjourned.

EVENING SESSION.

8 o'clock p. m., June 19, 1906.

CONTRACT PRACTICE

The House was called to order by the President at 8:45 o'clock.

The President stated that the meeting was called for the consideration primarily of the proposed repeal of a portion of Chapter IX of the By-Laws and for the transaction of such other business as might come before the House.

Dr. J. H. Stuart: I would like to have Dr. Fullerton explain the situation in connection with the proposed repeal of this section.

Dr. W. S. Fullerton: As near as I can understand it the object of this resolution is this: A great many of the county societies feel that there is an unjust discrimination against their members who are doing contract practice, who are taking lodge work and that kind of practice. We are allowing, according to this by-law, surgeons of corporations, such as railroads, steamboat companies, milling companies, and similar corporations, to do the same class of work which we are denying to our members the right to do. There has been considerable dissatisfaction in regard to this discrimination, and they either want this whole thing repealed or else have the corporations included. I had a talk with Dr. Sweeney this evening, and asked him what he intended. His idea was to have the whole thing repealed,—strike it out of the constitution altogether. That is, as far as I understand it, the object of the proposed repeal of this section of the By-Laws.

The President: Have the county and district societies taken this matter up?

Dr. Fullerton: Some of them have.

The President: Have they settled it to their satisfaction?

Dr. Fullerton: They have asked their delegates to bring the matter up here. The Ramsey County Society is dissatisfied. Quite a number of our members have withdrawn that they might be able to do this work. The resolution that has been read from the Hennepin County Society shows that they feel the same way. I have heard a similar expression from some of the outside counties.

Dr. F. A. Knights: Dr. Fullerton spoke of the resolution from the Hennepin County Society. That came exactly for that reason. When this by-law was first presented to the county society for consideration the exception was made to apply to surgeons of railway companies, shipping and mining companies, and their assistants under salary. That was the form in which the amendment was discussed in the Hennepin and other county societies. That was stricken out, and it is claimed, and I should say justly to some extent, that some of the railroad fee-bills cut the rate just as much as lodge fee-bills. The Hennepin County Society took the matter up for that very reason, for we have been unable to answer men who asked us if there was not unjust discrimination against the little men and in favor of the big men.

Dr. E. J. Abbott: I think a great many men in St. Paul feel it is unjust to shut off their practice in the Hibernians and Woodmen, and then let others cater to the Northern Pacific and other railroads at half rates. It is just as much a physician's work as any other, and when this subject first came up and this matter was spoken of, some said that would be included, but I understand it has not been included, and they have not been interfered with in the least. I think that is what makes a good many of them feel sore.

The President: Some of the reasons stated are very good, but the chief thing is to have something upon which we can agree among ourselves. We have got to have something upon which we can work together, and I think it would be wise to learn whether this matter has in anyway been taken up by the American Medical Association. If it has not, I don't think there is any special reason why we should pass upon it as long as it has not been taken up by the A. M. A.

Dr. Fullerton: I think our delegates to the American Medical Association were instructed to ask the opinion of that body, and the House of Delegates passed the matter over, at least we got no expression of opinion. This whole thing was forced upon us two years ago by the action of the Stearns-Benton County

Society expelling a member for doing that kind of work. He appealed to the councilor of his district, and the councilor upheld the plaintiff and ordered him re-instated. The matter came to the Council, and we upheld Dr. Knights, and then it came before the House of Delegates and this by-law was introduced so we might have something that would be in force throughout the state. It was felt to be unfair that a member of a county society should be expelled and thus lose his membership in the State Association while physicians in other societies were doing the same thing and were members in good standing. That is why this by-law was passed upon and became a part of our constitution.

Dr. C. A. Stewart: In St. Louis County the matter seems to have adjusted itself very nicely so far as lodge practice is concerned. The different lodges have accepted the condition, and instead of employing a doctor as heretofore, they simply pay the individual who is sick a benefit, as they term it, and he is at liberty to select his own physician. I have talked with the laity in regard to it, and they express themselves as being satisfied, and I do not know of any physician that is disappointed so far as that phase of the matter goes. These other matters are evils, distinct evils, but whether on that account it is better to rescind the whole by-law is a grave question.

Dr. Andrews: What Dr. Stewart said of St. Louis County is true of Blue Earth County. The Blue Earth County Society has adopted practically this amendment, and it has worked very satisfactorily. I believe it would be very unfortunate to repeal it, but I believe it ought to be amended because it is class legislation. There are many lodges that seek cheap service. They ask a man to attend their families for one dollar a year, and it is a very unsatisfactory practice to the physician and to the families.

Dr. Hunter: Are we perfectly sure that all sorts of lodge practice leads to a cheap practice? Perhaps Dr. Beebe could inform us of the particulars of the case that brought this matter up. I think there is one case in this city where an order with a membership of something over seven thousand, employs four doctors at an annual salary of \$4,000 each.

Dr. Knights: It amounts to two dollars a year for each family.

Dr. Hunter: If the society assesses its members two dollars, and then employs a physician that is not cheap. That is something like the benevolent insurance of the Northern Pacific Railroad. In our large mills they are assessed so much, and when sick they are taken care of in our hospitals. I do not think it is often that an incompetent doctor is employed

in those cases, and, whether he is incompetent or not, I am not sure but that with the fees collected and paid for such service, we can argue that it is a cheap method. Do I understand that in lodge practice a physician agrees to take care of a family for a year at a particular price, say one dollar each, when they are sick?

Dr. W. L. Beebe: One dollar a year. If a man is sick three hundred days in the year the physician gets only one dollar for his services.

Dr. E. J. Abbott: Are they not paid by the visit?

Dr. Beebe: No, by the year.

Dr. Hunter: If there were seven hundred members and they paid two dollars each you would get \$1,400 and would have to take your chances on the business you did. As I understand it, in Germany the thing worked so much to the disadvantage of the doctors that the practice was discontinued. Sociologically it worked out badly to the profession. So far as paying a man a salary is concerned, if the salary is fair, or paying so much per capita, the amount depending upon the membership of the lodge—whether that would constitute bad practice I am not prepared to say. Certainly it has seemed to me, and has seemed to members of the Hennepin County Society with whom I have talked, that this idea of excepting the large corporations would certainly be very bad. If they have fallen under that unfortunate condition and have been underpaid for years it is time the society should check the evil and help those men.

Dr. E. J. Abbott: It is my opinion that the original position referred to by Dr. Knights, "under salary," would straighten the thing out.

Dr. F. A. Knights: The society referred to which pays a salary of \$4,000 is the Eagles. I was told the Eagles had over 7,000 members in this city, and they paid two dollars per capita for medical attendance for themselves and their families. The fact that these men are getting \$4,000 apiece or less out of it does not prevent it from being a cheap and vicious practice of medicine. Those seven thousand men and their families ought to pay a great deal more than \$16,000 a year for medical services. It is extremely bad, and some of them know it and do not employ the lodge physicians at all. It is not ordinary insurance, but it is a scheme to secure medical attendance at a less price than it is worth. I do not know whether the quality they get is worth more than it brings. The same method prevails in the order of Foresters, Red Men, and possibly one or two other orders, but those three are the worst offenders in this city. I do not see

how we can consider it anything else than extremely vicious practice when a man by the payment of two dollars a year can secure for himself and his family medical services for an entire year. It would not be so bad if it were for himself only, but it includes his whole family and that makes it positively bad.

It has seemed to me that if we should go about this thing in the right way we might bring the various orders to accept the arrangement spoken of here tonight, that in case of sickness they might be permitted to draw from a fund in the treasury and select their own physician; and, if necessary, a fee-bill could be agreed upon by those orders provided it was satisfactory to the profession. I think if that could be brought about it would afford a solution of this problem. I have spoken to some of the men who have been doing that kind of work and indicated that such a method might be brought about, but they don't want it that way. There are several ways in which this thing works injury to the profession besides cheapening the cost. It works an injury to the public, and to the members of the order, as well as to the profession, because it brings an inattentive and inefficient service to a great number of people. I believe we could persuade them that the system is wrong.

In regard to this amendment: I have not heard of any means by which we could possibly enforce this expulsion clause. It is up to the State Association to do that, and I do not believe it can be sustained until the State Association takes it up and says to the county society that it must purge itself or it will go out. Until the State Association does that we may not be able to enforce the act. As the matter now stands, with the unfairness that exists, no county society is liable to take it up; Hennepin will not and Ramsey will not, and I don't believe any other counties will.

Dr. Andrews: If the House of Delegates will indulge me again I have something here that was suggested by certain things that were said here this afternoon, and it is in line with what I believe the Association should act upon, and I desire to present to the House of Delegates the following resolutions:

Resolved, by the House of Delegates of the Minnesota State Medical Association, in regular convention assembled, That we believe the time has come for the State of Minnesota to have enacted laws regulating the practice of medicine.

Resolved, That the Committee on Public Policy and Legislation be authorized, and is hereby commanded, to cause an act regulating the practice of medicine in the state of Minnesota to be prepared within thirty days,—one that shall be full, complete, constitutional, and equitable.

Resolved, That a copy of this act be sent to every component society in the state of Minnesota on or before August 1, 1906, and that component societies be requested to meet and take definite and positive action,

pledging themselves to support, in the primaries and in the general election, only such candidates and nominees for the senate and house of representatives and for governor and lieutenant governor as will pledge their support to such act.

Resolved, That \$500 be appropriated from the funds of the State Medical Association to be used in every legitimate way to secure the passage of such act.

Resolved, That any part or all of such sum of money be used by the committee for any legitimate expenses, and that said committee be required to keep an itemized account of the same and report back to the House of Delegates.

Dr. Andrews moved the adoption of the resolution.

The President: For my own part, I think a matter as important as that resolution should have a full house to consider it, and there is some question now whether we have a quorum.

Dr. Andrews: I thoroughly agree with the president upon that point. It is a very important subject. It is so important that we ought to take hold of it. I thoroughly believe and know that if the physicians of the state take hold of this matter and make a united effort we can secure such legislation as we are entitled to.

Dr. Hunter: There are subjects that some of us are more interested in, but let that pass; the facts are that we are not able to enforce the medical law that we have. The member who has been before the legislature said they did not have a good opinion of us, and I am not sure but that I know the reason why. It is a ticklish matter to enforce a law that is agreeable to us and that makes it disagreeable for our competitors. Who are our legislative committee and what is their business? It would really suggest to them more definitely what they should do. Is the committee to be appointed by the president or does it hold over? If we are going into this business of making laws for the state of Minnesota I would like to be informed about it.

Dr. Andrews: Permit me to say that I think it strange that the profession should take that position. Good legislation is a better thing for the people of the state of Minnesota than it is for the physicians. All will admit that. If we had medical legislation against patent medicine it would be a great benefit to the people. What is the reason that the physicians of Minnesota in this corporate body have not a perfect right, to say nothing of their duty, to ask and demand equitable legislation? I am from the country and I feel a little injured at the intimation that country doctors do not amount to anything and that country legislators do not amount to anything. I tell you they do. They are men like ourselves and they are willing to listen to sensible pleas. The trouble is we have not been united and we have not done anything until the legis-

lature was in session. I hope this matter will not go over until the next session.

Dr. Wm. Davis: I think we are all in sympathy with Dr. Andrews' resolution, but I think he has undertaken more than can possibly be accomplished. He proposes to have our Committee on Legislation report in thirty days that measure, which must be printed, must be referred to all of the component societies of the state, and, if that reference is going to do any good, we have got to hear their comments on this proposed legislation. It would be an utter impossibility to get an answer back from the component societies in time for the committee on legislation to give out notices all over the state as they would have to do before the primaries. The primaries come in September, and it would be an impossibility to have that work done before the primaries. If anything is to be done with the resolution it certainly cannot be done with the next legislature.

For the purpose of having this thing gone into more thoroughly I move that these resolutions be referred to the Committee on Medical Legislation and that they report on the practicability of carrying out the purpose of the resolution.

The motion received no second, and no action was taken.

PREVENTION OF TUBERCULOSIS

The President: Dr. Bracken is with us this evening and desires to speak for a few minutes upon the matter of appointing a committee to represent this Association in working with the National Association for the prevention of tuberculosis.

Dr. H. M. Bracken: The National Association for the Prevention of Tuberculosis is represented by Dr. Leo Farrand, of New York. He was out here last week and he is going about the country trying to form state organizations to affiliate with the National organization without being necessarily a part. The idea is for the state association to carry on an educational work. That requires a meeting of the anti-tuberculosis committee, of which Mr. Geo. Christian is chairman. A committee of five was appointed to confer with committees from other places to consider this matter of forming a state organization. I went to Duluth and met Mrs. Washburn, who is at the head of the women's clubs, and asked her to appoint a committee of five to meet with a conference, and I want to ask the State Medical Association to appoint a committee to meet with such a conference. When such a conference is to be called is not yet determined, but it ought to be called within two or three weeks, and this body should appoint such a committee. Where this conference is to be held is

not yet settled. I simply ask the House of Delegates to consider this matter, and, if they see fit, to instruct the president to appoint a committee of five to represent this Association in that conference. Whether they will be represented on the local committees I do not know. It would be rather unfortunate if there were no physicians on the local committees, but they should come from this Association and from the homeopathic.

At this point, there being no quorum present, on motion of Dr. Beebe, the House of Delegates adjourned until Thursday morning at 9 o'clock.

THURSDAY MORNING SESSION

9 p. m., June 21, 1906

Pursuant to adjournment the House of Delegates was called to order by the President at 9:30 o'clock.

The minutes of the previous meeting were read and approved.

ELECTION OF OFFICERS

The election of officers being the first order of business, on motion of Dr. Spalding an informal ballot was taken for the office of president.

The chair appointed Drs. Cummings and Spalding as tellers.

An informal ballot was then taken, and resulted as follows: Total number of votes cast, 25, of which Dr. H. A. Tomlinson, of St. Peter, received 12; Dr. C. E. Dampier, of Crookston, 6; Dr. J. A. Quinn, of St. Paul, 2; Dr. W. H. Magie, of Duluth, 2; Dr. D. N. Jones, of Gaylord, 2; and Dr. J. W. Andrews, of Mankato, 1 vote.

The Secretary announced that according to a provision of the constitution no member of the House of Delegates was eligible to office except that of councilor.

Dr. H. A. Tomlinson having received the highest number of votes, Dr. Andrews moved to make the ballot formal, and that the Secretary be instructed to cast the ballot of the Association in favor of Dr. Tomlinson.

Objection being offered, a formal ballot was ordered, and resulted as follows: Total number of votes cast, 29; of which Dr. H. A. Tomlinson received 26, and Dr. C. E. Dampier, 3.

Dr. Tomlinson was declared duly elected president of the Association.

Dr. T. J. Catlin, of Delano, presented the name of Dr. E. Y. Chilton for vice president.

On motion of Dr. F. A. Knights the Secretary was instructed to cast the ballot of the Association for Dr. Chilton.

Dr. D. N. Jones, of Gaylord, presented the

name of Dr. F. W. Penhall for second vice-president, and on his motion the Secretary was instructed to cast the ballot for Dr. Penhall, of Morton.

Dr. J. A. Quinn, of St. Paul, proposed the name of Dr. Pierre C. Pilon, of Paynesville, for the office of third vice president, and on his motion the Secretary was instructed to cast the ballot of the Association in favor of Dr. Pilon.

Dr. J. W. Andrews placed in nomination, and on his motion the President was instructed to cast the ballot of the Association in favor of Dr. Thomas McDavitt for secretary.

Dr. G. S. Wattam, of Warren, presented the name of Dr. R. J. Hill for treasurer, and on his motion the Secretary was instructed to cast the ballot of the Association in Dr. Hill's favor.

The terms of the councilors of the first district, Dr. E. A. Hensel, of Alexandria, and of the fourth district, Dr. F. A. Knights, of Minneapolis, having expired, on motion of Dr. Wm. Davis, the Secretary was instructed to cast the ballot of the Association for both incumbents to succeed themselves, each for three years; F. A. Dodge, councilor for the seventh district, on motion was re-elected for three years.

The Secretary: I wish to state that I was present at the meeting of the House of Delegates of the American Medical Association and suggested that we would have to have one more delegate, as the apportionment in 1903 was one delegate for every 500 members or fraction thereof, and as we have over 1,100 members we would be entitled to an additional delegate. However, according to the constitution of the A. M. A. re-apportionment is made every three years, and as the House of Delegates is practically limited to 135 members, it was found necessary to increase the number of the apportionment to 600, and that keeps us down to two delegates.

On motion of Dr. Hunter, Dr. A. E. Spalding was chosen to serve as delegate to the American Medical Association for two years.

On motion of Dr. C. A. Stewart, Dr. J. J. Ecklund, of Duluth, was named as alternate delegate for two years.

CONTRACT PRACTICE

The next order of business was the notice by Dr. Arthur Sweeney, of a motion to repeal Sections 15, 16 and 17 of Chapter IX of the By-Laws relating to contract practice.

Dr. Sweeney: This subject that comes before us now is an amendment to the constitution made last year in regard to contract practice. I am heartily in sympathy with any resolution to amend the constitution which

will correct the evils of contract practice. I feel, however, that this amendment is objectionable in that it binds the many and exempts the few. It works injustice in such a way that the amendment is practically inoperable. Under the workings of this amendment the chief surgeons and their assistants of railroads are exempt. There is no disguising the fact that this is in favor of surgeons who do railroad work, and especially in favor of one surgeon, the chief surgeon of the Northern Pacific Railway Benevolent Association. I am in favor of making this rule uniform or else of repealing it entirely. As it stands now it penalizes a man in a county society for doing lodge practice and exempts another who does practically the same thing. I bring this matter before you for the repeal of this rule, not with the intention of rushing it through without consideration, but in order to bring this matter before you to see if we cannot make this regulation absolutely just, and if it is not possible to do so to wipe the thing out entirely. I therefore move that this amendment to the constitution be repealed.

Dr. C. A. Stewart: I am heartily in accord with what Dr. Sweeney has said in regard to the injustice of this regulation. It seems to me after we have worked two or three years to get a clause of this character we should consider the subject very carefully before repealing it, and see if by some means we cannot modify it or improve it so it will be satisfactory. It is unreasonable to expect that any enactment of this kind will be satisfactory to everybody. There are some classes of practitioners engaged in contract practice whose contracts are so lucrative that they would prefer to continue their contracts to continuing their membership in the State Association. These men are beyond our authority to control, and so it is unfair to place a burden upon smaller men. I believe all that would be necessary would be to strike out the reference to the chief surgeons of railway systems. If that one clause were stricken out it seems to me the balance might be retained with benefit to the Association and the profession. I was sent here last year with instructions to use my influence and vote for a clause condemning contract practice. I was sent back this year for the same purpose. I would like to offer an amendment to Dr. Sweeney's motion that we strike out the clause I referred to in Section 15.

Dr. J. H. Stuart: As Dr. Sweeney said, I would be heartily in favor of any action we might take that would place the practice of medicine on a satisfactory basis, but that is where the difficulty lies. We simply are not able to do it. There are always men in the profession who will not do things that we would like to have done, and the more we legislate to

meet that character of men the more trouble we shall have.

Dr. L. M. Roberts: I want to say that I endorse Dr. Sweeney's views. Our Upper Mississippi Medical Society, which contains some of the principal offenders of the kind mentioned, feel that we ought to approach this subject with a great deal of caution and with an effort to show fairness and justice to all. I feel that if we take too radical action in this matter we shall lose some of our most valued members, including one of the most eminent members in our section of the state. I think we ought to try to conciliate rather than anger, and there are men whom this action would affect whom we cannot afford to lose. I hope there will be no radical change made without careful investigation.

Dr. Wm. Davis: I would be sorry to feel that this House of Delegates would be afraid, through the danger of losing members, to carry out any course that it believed was the right one to take. The question is not only what is the best course to pursue for ourselves but what is right toward the public. This system is not right when it permits a man in the profession to take care of patients at a cost of seventeen cents a visit, as I know as a positive fact has been done. It is not in human nature that medical services furnished at such a price should be really good work. There is one way we can straighten this matter out. It is radical, but it can be done, and that is to prohibit the taking care of patients at all, except in charitable cases, on any salary basis. The thing must be brought down to a fee basis. We must either pass an amendment like that or wipe the whole thing out as provided by Dr. Sweeney's motion, and his motion was originally made for the purpose of bringing this thing to a test and to a vote in the House of Delegates.

Dr. Andrews: I have very decided views on this matter, and I am distinctly opposed to Dr. Sweeney's motion. It has been stated here this morning that this might stir up an awful storm if it was not handled in a certain way. Now, gentlemen, let us eliminate that feature of the matter. It is not a question of whether it pays, but whether it is unjust to the medical profession. This legislation was adopted by the Blue Earth Medical Society, and when it was adopted one of our physicians was doing contract work for the Eagle tribe at one dollar per family, and one family was sick a great deal, and he did a great deal of work there, and he did it for a great deal less than seventeen cents a visit. That family had another physician for many years before the Eagle physician attended them, but they employed him because he was doing business for one dollar per year. The physician was an honor-

able man and dropped the work. He received \$600 a year, and he was pleased with the remuneration, but he said it was not fair to the rest of the profession. We have taken action here in relation to insurance companies, and I believe insurance companies are no better able to pay for services than railroad companies. I do not believe that railroad companies are so small that they want a surgeon to do business at less than a good fee. So I think the matter of railroad surgeons should be eliminated, and let good surgeons who do railroad work charge as much as they charge bankers and merchants for the same service. I do not believe it is fair, and I object to the penalty clause. I believe our profession is honorable enough so it can be placed upon its honor in these matters, and I will move an amendment to Dr. Stewart's motion to strike out entirely the Section 17 of Chapter IX.

Dr. Sweeney: We are trying to trim up a weed that troubles us all. We cannot amend this thing so as to make it equitable and fair without impairing the usefulness of the Association and driving out some of the most celebrated and distinguished of our membership. We cannot trim this up in any way by striking out the penal clause or striking out Section 17. That simply means that we have something in our constitution that does not mean anything. Another question arises: Has this law ever been enforced? Can it be enforced? Will it be enforced? Suppose we amend it, what is going to be the consequence? It will be just as it was before. Nobody will be expelled. No county society will lose its charter because it retains in membership a man who does contract practice. It seems to me we are blowing a good deal of air in this matter. Let us get at this thing fair and square. It seems to me there are two things to do. One is to repeal this section entirely, wipe it off our books, or else refer this under the referendum clause to the general meeting of the Association and let them act upon it.

Dr. W. L. Beebe: Most of you are aware that this contract business originated in our country. We supposed there was something in it and we brought it up to the councilor, we took it to the House of Delegates and we said: "You are the men to do this thing." It is very evident to every member of this Association that this thing cannot be carried out, no matter how you amend it. I am opposed to this whole question of medical legislation. (Applause.)

A vote was then taken on the motion offered by Dr. Andrews to amend the amendment offered by Dr. Stewart, providing for the striking out of the penal clause, and the amendment was lost.

A vote was taken upon the amendment offered by Dr. Stewart to strike out certain words in Section 15, which amendment was declared lost.

Dr. F. A. Knights called for a rising vote, which resulted in a vote of 15 in favor and 14 opposed to the amendment, and it was declared carried.

The original motion offered by Dr. Sweeney providing for the repeal of Sections 15, 16, and 17 of Chapter IX of the By-Laws, as amended, was then put to a vote and prevailed.

Dr. Geo. C. Barton moved a reconsideration of the vote.

On motion of Dr. Davis a roll-call was ordered, resulting in 17 negative and 8 affirmative votes, and the motion to reconsider was declared lost.

Pursuant to the vote taken, Sections 15, 16, and 17 of Chapter IX of the By-Laws were declared repealed.

Dr. Andrews: I want to rise to a point of order that it may be placed on record. When the vote was put upon Dr. Sweeney's original motion I voted as I did not intend to, and I arose and made such an announcement before the negative was put, consequently I had a right to change my vote at that time. I wish that put on record. We are going according to Roberts' Rules of Order.

Dr. W. S. Fullerton, in the absence of the chairman, Dr. H. M. Workman, submitted a report of the committee appointed to consider the feasibility of publishing a state journal.

REPORT OF COMMITTEE TO CONSIDER THE ADVISABILITY OF PUBLISHING A STATE ASSOCIATION JOURNAL

Mr. Chairman, Gentlemen, Members of the House of Delegates:

Your committee on the advisability of publishing a State Association journal begs to report as follows:

The chairman of the committee corresponded with the two state associations which have published a journal long enough to be in a position to give opinions of value on the subject, viz., Kentucky and California, formulating a set of questions which, with the answers to them, as well as the accompanying letters, we wish to embody in this report as an integral part thereof.

California carries on her journal on correct business principles, paying the editors a salary, which seems to us the only proper way and the only basis upon which to form an estimate. We are of the opinion that it would cost this Association at the lowest estimate \$4,000 per annum to publish its own independent journal. We cannot expect more than \$1,000 per annum revenue from advertisements. Our membership dues will amount to less than \$2,500 at the present rate, and we are under promise to reduce the rate to one dollar per annum, although this possibility would not be insisted upon.

We therefore beg to report that in our opinion it

is unwise for this Association at the present time to publish an independent State Association journal.
(Signed) (Chairman Absent)

F. A. KNIGHTS,
W. S. FULLERTON,
Committee.

Data from other state associations publishing journals supplemental to committee report.

CALIFORNIA

- (1) What is your circulation? A. 2600.
- (2) What is your association membership? A. 1700.
- (3) What is your plan of editing? A. A salaried editor, assisted by a publication committee.
- (4) How are your editors remunerated? A. \$2500.
- (5) What is the cost of printing? A. About \$3,000.
- (6) What is the cost of mailing? A. About \$20 per month.
- (7) Size of journal? A. 8 $\frac{1}{4}$ x11 $\frac{1}{4}$, 72 pages.
- (8) How often issued? A. Monthly.
Free or not to members? A. Free.
- (9) What are your advertising rates? A. Page, \$150; half page, \$85; quarter page, \$60.
- (10) What is your revenue from "ads?" A. Between \$6000 and \$7000.
- (11) Revenue from other sources? A. _____
- (12) Does your journal yield a surplus to the treasury or a deficit, and how much? A. _____

KENTUCKY

- (1) What is your circulation? A. Almost 2000 copies.
- (2) What is your association membership? A. 1500.
- (3) What is your plan of editing? A. Our state secretary is also our editor.
- (4) How are your editors remunerated? A. Our secretary-editor is paid by the association \$600 per year.
- (5) What is the cost of printing? A. About \$110 per issue of 2000 copies.
- (6) What is the cost of mailing? A. _____
- (7) Size of journal? A. 48 pages, 8x11.
- (8) How often issued? A. Monthly.
Free or not to members? A. The annual dues (\$2.00) includes subscription to journal.
- (9) What are your advertising rates? A. _____
- (10) What is your revenue from "ads?" A. First year, \$850.31; current year about \$1000.
- (11) Revenue from other sources? A. None.
- (12) Does your journal yield a surplus to the treasury or a deficit, and how much? A. Deficit of from \$300 to \$500.

Note.—If secretary-editor's salary were reckoned as a journal expense the deficit would, of course, be increased by \$600.

Income from membership fees, plus receipts from advertising, amounts to about twice journal expense.

Louisville, Ky., Sept. 31, 1905.

Dr. W. S. Fullerton,
St. Paul, Minn.

Dear Doctor Fullerton:

Your letter of recent date at hand, and it gives me much pleasure to fill out the questions contained in your list.

In regard to obtaining entrance to the second class of mail matter, we found it necessary to have our council pass a resolution devoting \$1.00 of our annual dues for each member as a subscription to the journal. This made it all right and seems to be a

very simple way around the matter. Be sure you do this before you apply for admission to the mails, because if you make your application wrong it is a matter of considerable difficulty to correct it, but if you make it in the right way it goes through very easily. If I can give you any further information I trust you will call upon me.

Under separate cover I send you the last issue of our journal and also the special issue which was gotten out some months ago.

Very truly yours,

(Signed) JAMES B. BULLITT,
Secretary.

San Francisco, Cal., Sept. 19, 1905.

Dr. W. S. Fullerton,
St. Paul, Minn.

Dear Doctor:

I am just in receipt of your letter of the 12th inst. enclosing a blank asking for certain information, and I take pleasure in handing it to you enclosed.

In reply to question 11 and 12, I beg to advise you that the editor of our journal is the secretary of our society; that all the revenues of the society go through this one office, and consequently it is somewhat difficult to segregate all items of expense. We receive an assessment from county societies of \$2.00 per member. We have used the journal to stimulate organization, and we have spent money rather liberally, both to build up the journal and to increase organization, so that up to the present time we have had no surplus in the treasury, but we have not fallen behind.

We also publish annually a directory of physicians in California, Oregon, and Washington, and this is sent free to members. It just about pays its expenses.

There is no doubt in the world but what the state association journal can be made a self-supporting, if not indeed a paying, proposition, if it is handled on a business basis. In other words, to get to the point where it is a good business proposition, hard work, time, and money must be put into it. There is sufficient good first-class advertising in this country to make it pay; the question is simply to get this business.

Quite a number of us have been interested in an effort to form an association of state journals, and at the present time I have the honor to be president and Dr. Bullitt, of Kentucky, is the secretary of this partly formed organization. I enclose you a rough draft of the proposed scheme of our organization, and will ask you to give me the benefit of your opinion upon it.

There is absolutely no doubt in my mind but that when we can have formed an organization of this sort, we can syndicate the advertising business and place a considerable amount of good business with each journal in the combination. First, however, we must have an iron-clad agreement as to the nature and the quality of the advertising to be accepted.

Any further information which you may desire I shall be very glad to furnish if within my power.

Cordially yours,
(Signed) PHILIP MILLER JONES,
Secretary.

Dr. Sweeney moved to adopt the report of the special committee as read.

Dr. Andrews: If we adopt that report it is equivalent to saying that this House of Delegates recommends against publishing an independent state journal by the Association.

Dr. D. N. Jones: Does that mean that we discontinue the present publication, or has it reference to a special journal? If we adopt it does it do away with the journal we have at the present time?

The President: We cannot do away with that; we have a contract.

A vote was then taken on the question to adopt the report of the committee and the motion of Dr. Sweeney prevailed.

The Council, through its chairman, Dr. W. S. Fullerton, submitted the following report:

REPORT OF COUNCIL

Mr. Chairman, Gentlemen, Members of the House of Delegates:

The Council begs to submit the following report:

At a meeting held in September, 1905, a contract was entered into with the Northwestern Lancet for a period of two years at one dollar per member per annum, payable monthly, pro rata, for the publication of the Transactions of the Associations, whereby a saving of at least \$1500 is effected.

The Council met again on June 19, 1906, and transacted the routine business of auditing bills, treasurer's report, etc., and again on June 20th to consider an ethical proposition confronting the profession at Winona, viz., the advertising of specialties while doing general practice.

Inasmuch as the Winona Society has not acted upon the specific charges brought against one of its members, no case has been brought before the Council upon which to make a ruling, but simply a hypothetical question of ethics has been laid before it for an expression of opinion.

The Council feels that this is a question variable in its conditions according to locality, and that while it may show bad taste on the part of the individual, it does not, we think, constitute unprofessional conduct in a technical sense.

It is a matter that should be dealt with by the local society.

(Signed) W. S. FULLERTON,
Chairman.

Dr. O. E. Linjer moved that the report be adopted, and the contract ratified.

Dr. Sweeney: I would like to inquire whether the Council has made arrangements for the publication of an independent or dependent state journal.

Dr. Fullerton: We have entered into a contract for two years with the Northwestern Lancet, to be under the supervision of this Association through its Council. The contract for publication was let on bids.

Dr. Sweeney: I would like to ask by what authority there is put at the head of that journal the statement that it is the official organ of the Minnesota State Medical Association? I call for the reading of that contract.

The Secretary: I have not the contract with me, but I can send for it and produce it this afternoon. However, I can state what is in the contract.

Dr. Sweeney: I want the contract. I call for the reading of that contract word for word.

It is not in the report of the Council that the Northwestern Lancet is the official organ of the Association. It is fair to the Association to bring it out. I don't intend to let it slide through. If the Council has exceeded its authority I propose to call it down.

Dr. F. A. Knights: I wish to say—

Dr. Sweeney: I have the floor and I wish to finish my remarks. It is not a question of the St. Paul Medical Journal, but it is a question of the rights and duties of the officers of the Association. At the last meeting we talked of the advisability of publishing a state journal, and appointed a committee to report to the House of Delegates. It did not make a particle of difference whether favorable propositions or unfavorable propositions were submitted, the only function of that committee was to inform the House of Delegates so we could take action. According to the constitution it is the function of the Council to "provide for and superintend the publication and distribution of all proceedings, transactions, and memoirs of the Association, and it shall have authority to appoint an editor and such assistants as it deems necessary." Beyond that it cannot go. If it goes beyond that it exceeds its authority. It is a question of the authority of the Council to authorize the publication of a state journal when this House of Delegates has appointed a committee to consider the matter, and that committee has reported adversely. There is something concealed here, because the Council has not, according to its report, made any contract to publish a state journal, and officially we have no state journal at the present time, and yet the Northwestern Lancet heads its pages with the words, "Journal of the Minnesota State Medical Association." Gentlemen, there is "a nigger in the woodpile," somewhere. This committee has exceeded its authority, jumped in a hole, and by its report is trying to duck.

The President: The members of this committee are also members of the Council, so they knew what they were doing. It would be proper to have those bids and the letter, but they are not here and we shall have to send for them.

Dr. Sweeney: I would like to ask if the Council is competent to answer the question, whether they have authorized the publication of a dependent or an independent state journal.

Dr. Fullerton: We have entered into a contract and did so perfectly within our rights. The simple fact that it is headed "The Journal of the Minnesota State Medical Association" is merely a technical point. The point is that it is not an independent state journal, but is simply under contract to publish the

transactions of the Association. We have entered into a contract for two years, although the constitution and by-laws would permit us to enter into a contract for five years; that is within our power. We have not established a state journal.

Dr. Sweeney: I am glad to hear we have not a state journal. I would like to know whether provision has been made for a volume to distribute among members. Heretofore the reports have been published and distributed gratuitously. The St. Paul Journal has always published the papers of the Association gratuitously. The Council has asked us to spend \$1,200 for publication and distribution when we could get them for nothing in either of the journals.

Dr. F. A. Knights: As to gratuitous publication, it is well enough known that the Council has been paying money for the publication of the transactions in book form, and there has been no gratuitous publication whatever, and if a man wished to have his paper published in the journal he could have it published there, but it cost the Association more money to publish the transactions in book form than it costs to publish them in the present form.

I want to go back a little further than the status of the matter as it has come up thus far. When Dr. Bell made his address last year he recommended the consideration of the question of a state journal. On Dr. Workman's motion a committee was appointed to consider the matter. A committee was appointed consisting of Dr. Workman, as chairman, Dr. Fullerton, and myself. Dr. Bell remarking at the time that he appointed members of the Council upon that committee in order to facilitate the accomplishment of the purpose in view. The committee of the House of Delegates canvassed the matter, and received propositions from two journals already in the field, in order to find out whether it would be more advantageous to use one of the journals for this purpose or establish a new journal. That committee received a proposition from the Northwestern Lancet and also one from the St. Paul Medical Journal. The one from the Northwestern Lancet being so much more advantageous, in our judgment, to the State Association, that there could be no question (we will have both propositions read here if required) there could be no question in the mind of anybody but that the proposition of the Northwestern Lancet was a better proposition than that of the St. Paul Medical Journal. The contract with the Lancet gives us control of every word that goes into the journal, and relieves us from any financial liability whatever. The proposition of the St. Paul

Medical Journal gives us control of editorial matter only, and gives us nothing to say about the advertising policy of the journal or any other matter under consideration. The propositions as to the cost to the Association were one dollar per member. That committee was under the impression at the time that it was intended to report to the Council. That was the intention of Dr. Workman when he made the motion that he, as chairman of the committee, would report. It was also the intention of Dr. Bell when he said he would appoint members of the Council to facilitate matters. Admitting that the committee should have reported to the House of Delegates, the Council still had authority to receive information as to the best method of publishing its transactions. This provision in the constitution means that the Council is allowed to select its own method of publishing the transactions or else it does not mean anything at all. I contend the Council has perfect authority under the constitution, which could not be taken away by the House of Delegates if it wished, to do what it has done. The Council is not attempting to usurp the functions of the House of Delegates. It is working strictly under its authority as outlined in the constitution.

Dr. Wm. Davis: I think I can be trusted to take a neutral standpoint in this matter. I was editor of the Northwestern Lancet for fifteen years, and I do not propose to say anything that will bring the two cities into competition whatever. This committee of the Council has made a contract for two years, which must be carried out. Dr. Fullerton says they have the right to make a contract. He says they have the right to make the contract for five years. If they have the right to make a contract for any length of time they may tie the Association down for fifty years. Let me read what the constitution says regarding the publication of the transactions. "The Council shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Association, and shall have the authority to appoint an editor and such assistants as it deems necessary." Dr. Fullerton says the Council can make a contract indefinitely. I differ with him. I believe the Council has the right to make a contract from year to year, but not for a period of years. When this was passed the Association was publishing its transactions annually, and there was no temptation for the Council in the publication of the transactions to make a contract for more than a year, and I think when the Council made a contract for more than one year they established a dangerous precedent, and it ought not to be repeated. We must confirm this

contract, but I think we ought to set ourselves against that kind of a contract, in the future, without special authority from the Association, and I therefore move the adoption of a resolution by the House of Delegates that in future the Council contract for the publication of the transactions of the Association only for the current year, and not for any longer period of time, without special authority from this House of Delegates. I think if that is the sentiment of the House of Delegates it ought to be put on record.

Dr. Hunter: It seems to me that it would be impossible to make a contract for one year with a publishing concern. I am quite sure that a publisher whose business we regulate, as we have this past year, will lose from \$1,500 to \$3,000 in the loss of objectionable advertising. It is not possible for him to recoup himself in one year. I think I am correct in this statement. Possibly the gentlemen who made this business arrangement can tell. I would ask Dr. Davis to consider this well, and I think it would be well for us to fix the term. It would be profitable for us as well as the publishers.

Dr. Linjer's motion was then put to a vote, and the report of the Council was adopted, and its action ratified.

Dr. Davis: I will say in answer to Dr. Hunter that my resolution contains the provision that the Council shall make no contract for more than one year without the authority of the House of Delegates. Bringing the matter before us as a whole body they can make a contract for any number of years by the authority of the House of Delegates. I do not see any way to guard ourselves except by limiting the Council in making contracts to a single year, or to the current year, without express authority. That is my resolution, that the Council shall in future make no contract for the publication of the transactions, after the expiration of the current contract, for a longer period of time than the current year without the consent of the House of Delegates.

The motion made by Dr. Davis was put to a vote, and the resolution was unanimously adopted.

Dr. Sweeney: In view of the fact that the committee appointed to consider this matter has reported against the advisability of the publication of a state journal, and as the Council has reported that we have no state journal at the present time, I move that the Secretary be requested to notify the Northwestern Lancet that it is not the official journal of the Minnesota State Medical Association, and ask them to remove the name from the title.

The motion receiving no second, no action was taken upon it.

VOTES OF THANKS

On motion of Dr. McDavitt a vote of thanks was tendered both telephone companies for the use of the telephones; the Cable Piano Company for the use of an instrument; at the Gregg Shorthand School for furnishing free the services of Miss A. Ahrens, 2924 Third Ave. So., as stenographer and typewriter.

MEDICAL LEGISLATION

Dr. Arthur Sweeney, as chairman of the Committee on Medical Legislation, recommended that action upon the drafting of a new medical law under the provisions of the resolution submitted by Dr. Andrews, be postponed for one year.

Dr. Andrews: I rise to a question of privilege. I am sure this resolution is not understood by the committee or by many of the members. I do not want to be in the least drastic in the way of medical legislation, but an objection has been offered and it is on that account I rise to a question of privilege. The objection has been offered that the time is not sufficient, because the resolution provides that the Committee on Legislation shall cause to be drafted within thirty days an act which shall be sent to the several component societies before August 1st. The objection has been made that the time will not be sufficient. I want to say this, that the Committee on Legislation and two or three good attorneys ought to be able to draft an act in two weeks' time. The intention of the resolution is not that this act be sent to the different component societies that they may consider it, but that it be placed in their hands for action in regard to its use in future negotiations for the influence they may bring to bear upon the nominations of candidates. It is not to be referred back from the component societies to the committee; therefore I feel there will be sufficient time, and I believe this House of Delegates ought to take up the matter of legislation and the regulation of the practice of medicine, and if it is not done at this time we are shut out for two years. I simply rise to make this explanation, but if the report of the committee is accepted I shall have nothing more to say.

On motion of Dr. Hunter the recommendation of the Committee on Legislation as offered by Dr. Sweeney was adopted.

STUDY OF TUBERCULOSIS

Dr. D. N. Jones: By request, I wish to present the following communication:

St. Paul, June 20, 1906.

To the House of Delegates,
Minnesota State Medical Association,
Minneapolis, Minn.

Gentlemen:

May I ask of your body the appointment of a committee of five to meet with the various committees from other bodies and sections in the state look-

ing to the creation of a state association for the study and control of tuberculosis?

Very respectfully,

(Signed) H. M. BRACKEN.

This matter was brought up yesterday following the reading of a communication received from New York, but it seems the organization from which the communication came is somewhat antagonistic to the one with which it is proposed to affiliate under the request before us.

On motion of Dr. Wm. Davis, the president was instructed to appoint a committee of five to represent the Association at the proposed conference.

The president named the following committee:

Doctors J. G. Cross, Minneapolis; Chas. L. Greene, St. Paul; Allan B. Stewart, Owatonna; W. H. Magie, Duluth; Henry L. Ulrich, Minneapolis.

UNIFORM BLANKS

By request of one of the component societies Dr. F. A. Knights submitted the following resolution:

Whereas, There is little uniformity in the blanks used by the component societies for filling our applications for membership, and

Whereas, There are many other blanks used by said societies that should be uniform, therefore,

Resolved, That it is the sense of this House of Delegates that the secretary of this Association be instructed to have prepared

(1) Blank application forms for membership (card) to include all data called for by the A. M. A.

(2) Blank form transfer cards. (This could be made a part of application card and be printed on back of same.)

(3) Blank form (credentials for delegates and alternates).

Resolved, That said blanks be furnished to component societies free of charge, and that secretaries of component societies are hereby instructed to make out application cards in duplicate, one to be retained and filed with records of the local society, and the other to be sent to the secretary of the State Association after the applicant has been received into membership.

On motion of Dr. Knights the resolutions were adopted.

PLACE OF MEETING

The chair announced as the next order of business the selection of a place of meeting for the following year.

Dr. C. F. McComb: On behalf of the St. Louis County Medical Society I take great pleasure in extending to this Association a cordial invitation to hold its next meeting in the city of Duluth.

Dr. C. A. Stewart: I take great pleasure in seconding the invitation extended by Dr. McComb.

On motion of Dr. Thos. McDavitt the invitation was unanimously accepted.

REDUCED RATES

Dr. D. N. Jones: It seems to me there ought

to be some arrangement made by the officers of this Association with a view to obtaining reduced transportation for the members of the Association attending the annual meeting. The matter ought to be discussed at least.

The Secretary: In reference to the question of reduced transportation, I desire to state that for several years the Secretary has taken this matter up with the Western Passenger Association, and, as perhaps most of you understand, there is a certain amount of red tape that must be unwound before the reduced rate can be secured. A request for a reduced rate must be made of the Western Passenger Association, and they will send some person up to the meeting, which costs from \$12 to \$15. Certificates must be obtained by parties purchasing tickets from the agent for the line over which they travel, and it is necessary to have at least one hundred of those certificates, and they must be vised by this joint agent before the return rate of one-third fare can be obtained. The Secretary has several times gone through this red tape process and had to pay the joint agent \$12 for being present at the meeting, and the most certificates that have ever been secured was 35, and we needed 65 more to secure the rate. The Secretary is tired of spending \$12 to \$15 and getting no returns. The attempt can be made every year if the House of Delegates requests it, but I saw this year it was absolutely hopeless to try to secure one hundred certificates.

The President: A great many come from a short distance and think it is not worth while to ask for a certificate. A great many state societies have been meeting at this time of the year, just after the meeting of the A. M. A., and a number of them have changed their time of meeting to the fall, and I believe if our meetings were held in October or some time during the fall it would be a good plan.

On motion of Dr. Davis the Secretary was instructed to secure reduced rates next year if possible on the certificate plan.

TIME OF MEETING

By request the Secretary again read the resolution submitted by Dr. Andrews providing for the time of meeting.

Dr. C. A. Stewart: Since it has been settled that the next meeting is to be held at Duluth, I wish to offer a motion that it be held on the third Tuesday of August, 1907.

The motion was duly seconded, put to a vote, and prevailed unanimously.

Dr. Andrews: When I draw up these resolutions changing the time of meeting I had not in my possession a copy of the constitution and by-laws, as I have now, but I wish to offer this motion, that it is the sense of the House of Delegates that the spirit of this reso-

lution be hereafter carried out, namely, setting the time of meeting for the latter part of the summer or early fall.

The motion receiving no second, no action was taken.

On motion of Dr. Hunter, the House of Delegates adjourned.

GENERAL MEETING

In pursuance of the requirements of the constitution the Secretary submitted the following report:

REPORT OF THE HOUSE OF DELEGATES

Thos. McDavitt, M. D., Secretary

According to the constitution at one meeting during the general session it is necessary for the officers of the Council and the House of Delegates to give a short résumé of their stewardship.

As you have noticed, the Council thought it was wise to make a change in the form of the publication of the transactions. Up to this past year we have always published the transactions in book form, and this book has cost all the way from one dollar to one dollar and twenty-five cents each to have it published and get it into the hands of the members. The Council received bids from the two medical journals, one published in St. Paul and one in Minneapolis, and after careful consideration they accepted the bid of the Northwestern Lancet, and entered into a contract with the publishers for two years, ending December 31, 1907, which affords us publication of our transactions for three years, and also gives each and every member a copy of the journal bi-monthly. The contract called for a payment to the publishers of this journal of one dollar for each member of the Association, pro rata by the month. There are three years during which you will in this manner receive the journal twice a month, and we are enabled to save from \$1500 to \$1800 over and above what we would have had to pay under the old method of publishing the transactions in book form. This action was ratified by the House of Delegates.

The House of Delegates this morning repealed Sections 15, 16, and 17, of Chapter IX of the By-Laws, which you will remember was passed only last year. This is the by-law which covered the question of contract practice.

The House of delegates elected the following officers for the ensuing year:

Dr. Harry A. Tomlinson, St. Peter, president. (Applause.)

Dr. E. Y. Chilton, Howard Lake, first vice-president.

Dr. F. W. Penhall, Morton, second vice-president.

Dr. Pierre C. Pilon, New Paynesville, third vice-president.

Dr. Thos. McDavitt, St. Paul, secretary.

Dr. R. J. Hill, Minneapolis, treasurer.

Dr. E. A. Hensel, Alexandria, councilor first district.

Dr. F. A. Knights, councilor fourth district.

Dr. A. E. Spalding, Luverne, delegate to American Medical Association for two years.

Dr. J. J. Ecklund, Duluth, alternate delegate for two years to the American Medical Association.

The president appointed Dr. Graham and Dr. Bell as an escort to conduct President-elect Tomlinson to the platform.

REMARKS OF PRESIDENT-ELECT DR. H. A. TOMLINSON

I am very grateful for the honor you have done me. I appreciate it very highly, and shall endeavor to work for the best interests of the Minnesota State Medical Association as long as I am its presiding officer.

I do not want to make any promises, or say anything further except, that I would like to see at our next meeting some arrangement made whereby we may have a more continuous attendance upon the scientific part of our meeting, not only as a matter of courtesy to those who prepare and read papers, but because I believe it is to our advantage to hear these papers and discuss them, and if we get into the habit of continuously attending the scientific sessions I do not question but that it will do us a great deal of good. It seems to be a simple matter for one man to slip out here and there, thinking it will not affect the attendance, but such action is infectious and causes others to leave, and it is very embarrassing to those who read papers, as well as discouraging to the presiding officer.

The next meeting is to be held in Duluth in the third week of August, consequently the members in the cities will not have the excuse that their work and its responsibility is keeping them from the meetings; and I hope as many as possible from our cities will be present to participate in the meeting, and will encourage those from outside to be present; and I am sure from the encouraging attendance this year from throughout the state we may hope for an excellent meeting next year. (Applause.)

The Secretary: I failed to state that owing to a little legal quirk in our new re-organization scheme, and in the re-incorporation of our Association, it was necessary that our meeting be held at this time, and it will be necessary now by an open vote in this Association that everything that has been done, since we re-organized our Association in 1903, by the House of Delegates and the Council be ratified by this Association to be legally binding, and I therefore make a motion that all the actions, as exhibited in our records, that have taken place since our organization, by the Council and House of Delegates, be hereby ratified in open session of the Association.

The motion was duly seconded, and, being put to a vote, prevailed unanimously.

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SURGICAL OPPORTUNITY*

By C. H. Mayo, A. M., M. D.,

ROCHESTER

Is there such a thing as a favorable opportunity for surgery to be applied to obtain the best results? Undoubtedly there is. For example, the public hears that a person has had an operation, and, knowing nothing of the disease or circumstances, is surprised at an unfortunate result. From a professional standpoint, knowing the disease and conditions one surgeon says that he has operated too late; another, that the case was operated upon at the most unfavorable time.

We hear much of preventive medicine and very little of preventive surgery. There was once a prevailing impression that surgery was the handmaiden of medicine to be invoked only as a dire necessity. This was in the pre-antiseptic and pre-anesthetic days. We now know that a number of so-called medical diseases are purely mechanical in their effects and are, at all periods, surgical and easily cured by surgical measures.

Much of our knowledge of disease has been obtained from post-mortem findings. The final results of disease as shown at autopsy are so often looked upon as having been a part of the original condition that they were used as a further proof of the justifiability of not operating earlier.

How many physicians even to-day congratulate themselves upon curing gall-stone disease, or attack after attack of appendicitis in the same patient, having no chance to see conditions in either the living or the dead, or "the autopsical as compared with the autopsical?" (Bernays.)

A physician is as culpable to allow a patient to drift into an inoperable condition without exploration as he would be to let him drink water from a probably infected well. There is as much need to grasp a surgical opportunity in the low-

ering of mortality, reducing morbidity, and increasing permanency of cure, as there is to understand the essential principles of preventive medicine. To intelligently seize the best opportunity to help nature with her troubles there must be obtained a knowledge of her defense functions, and methods and powers of resistance. It is often easier to generalize and draw conclusions from a small experience than from a large one.

The term *inflammation* itself is a bad one used as it is, indiscriminately applied to nature's best efforts at defense and repair, as well as the results of infectious processes.

A few years ago the laboratory and laboratory methods became so popular that the patient was forgotten in the examination of secretions, excretions, and blood. Clinical examinations were made light of, and the old practitioners could with difficulty locate themselves or their work. The necessary association of all methods has gradually led to the selection of the essential and useful. For instance, in blood examinations the leucocyte count, which some years ago was looked upon as of great value to the surgeon in septic processes, gradually fell into disrepute as unreliable, but more recent investigation shows that it is of great value if a differential count is also made indicating the relative proportion of polynuclear cells as compared to the total leucocytosis. A relatively high count of polynuclear cells indicates low resistance, even if a high leucocytosis, indicating intense reaction, is present. A comparatively low count of these cells stands for a high state of resistance. When we can properly employ cytology and acquire the ability to control the opsonic property of the blood, we shall

*President's Address, delivered before the Minnesota State Medical Association, June 19-21, 1906.

make the next great advance in surgery and medicine.

The condition following most injuries and many infections can be divided into separate stages, usually three, which are well marked.

Thus we have in a fracture the immediate damage to the bone and the consequent effusion into the soft tissues following the injury. During the succeeding seven to nine days there must be an absorption of exuded and coagulated material before the system can exert more direct efforts at the bone repair. The operative treatment of fractures should be very early—the first day before continued effusion infiltrates and distends the soft tissues, or after nine days when repair requires mere apposition of fragments. The open treatment of fractures which cannot be adjusted or in which there is any doubt about it, is a method of treatment growing in favor. The opportunity in bone infection is to relieve tension and limit destruction by drilling or perforating the marrow very early. The time of election to aid nature further is to remove a sequestrum after such delay as is necessary for the formation of an involucrum of sufficient strength to support the bone.

In the infection of appendicitis there is necessarily an obstruction of the lumen of the appendix between the area of infection and the cecum. Repeated attacks may not pass the first stage. In progressive cases the acute inflammatory condition may be retained about forty-eight hours; some times more, often less. Then the rupture and second stage follow in which the symptoms change from essentially local to more or less general. Modified by the type of infection or degree of resistance we have local or diffuse peritonitis. The dangerous period of this stage extends over about four days more.

The third stage is that in which nature has absorbed the pus after sterilization, or still retains it as a local accumulation to be delivered by an operation or by rupture.

Practically all surgeons are agreed as to the advisability of operation in the first and third stages, but the mid-interval following rupture in desperate cases is still debatable ground; yet the bad cases—the operative hernias, intestinal fistulae and deaths—have necessarily passed by that safe early period of operative interference. This, to be sure, is because patients do not always seek relief in time. But the public is rapidly becoming educated and the responsibility of delay must be placed upon some one.

In the question of injury to the skull and brain we must consider what we know concerning the brain's reparative ability, or, rather, lack of it from the permanency of its functions and its limited ability to absorb within its structure.

The remote effects must be considered, as well as the failure to cure such a large proportion of those operated upon at a late period for relief of the effects of such injury as shown by degenerative conditions and epilepsy. Therefore, the efforts at repair and prevention of epilepsy should not be delayed until a little improvement prevents this being recommended or accepted, but should be made at such an early period as to be associated with the injury. Again, if conditions are such as to render operation justifiable, and an exploration of one side of the brain is made without satisfaction, the other side should, by all means, be examined.

While we cannot look for much repair of brain tissue or that of the spinal cord, we can expect great repair and regeneration of all nerve tissue which has a neurolemma, as has been pointed out by J. B. Murphy. Sensory nerves have a wonderful power of regeneration; motor nerves require a favorable opportunity.

How often in cases of glaucoma is surgical opportunity lost through waiting for supposed cataracts to ripen when a simple iridectomy might have prevented blindness? In this field also the danger of sympathetic loss of sight is certainly not made sufficiently important in our medical colleges, or there would not be so many such cases following efforts at saving blind and useless eyes.

In ear diseases the simple operation of paracentesis of the tympanic membrane has probably saved deafness, much disability, and not a few lives. If the mastoids were opened on suspicion, instead of after a careful weighing of symptoms and watching for those classical ones to be pronounced, an incalculable amount of good would be done by an easy, safe, and harmless operation. To make a diagnosis of mastoid disease after weeks or months of discharge and after a large external abscess has been formed, is as uninteresting as to make a diagnosis of gall-stone after colic and jaundice.

In considering the great scourge of the human race, tuberculosis, we must not neglect to mention the preventive surgery of the throat in removing disordered tonsils and adenoid hypertrophy. Incidentally, it might be said that this simple operation will relieve an untold amount of ear disease as well.

Tuberculosis gaining entrance through the tonsil may pass to the first tonsillar gland, and, by a direct or tortuous route, infect a few or all of the cervical glands and gain entrance into the venous circulation to be generally distributed. Except when located in the brain, the most of those who die from tuberculosis do so from the results of mixed infection. Yet how free many are to put the lance to cold abscesses, and allow the pa-

tient to dress his own wounds! To those who witness the sufferings of patients affected with tuberculosis of the kidney and bladder, nothing is more marked than to see the knife of prevention applied at so early a period that the removal of one diseased kidney prevents the infection of the other, as well as of the bladder. There is a favorable time for operating upon tuberculosis, and that is after the acute stage is past and the disease can be recognized as a local one.

Surgery of the upper abdomen involving the stomach, liver, and pancreas, gives a higher mortality than that of the lower abdomen, as it is near the danger zone of absorption, and adhesions are more permanent from lessened peristalsis.

The surgery of the stomach as done to-day is reducing years of sickness incident to chronic ulcer and obstruction, preventing cancer, or, at least, finding it early enough to be curable. The mortality of such work can no longer be urged as a further incentive to delay, as modern statistics show partial gastrectomy in suitable cases to be as favorable as in cancer of the breast. As soon as laymen understand that cancer of the stomach is as nearly favorable as external cancer, they will be as difficult to hold under treatment as to repeatedly care for and temporarily cure relapsing appendicitis.

In a review of 1,500 operations upon the gall tract just made by W. J. Mayo, it is shown how a failure to grasp the favorable moment, when all disease is confined to the gall-bladder without complications, leads to morbidity and increases the mortality. In the last series of 500 cases there were 272 in which the disease was confined to the gall-bladder, including many acute and chronic infections. The mortality was 1.4 per cent, and it included two cases of pulmonary embolism. The cases which required cholecystectomy showed a mortality of 1.62 per cent, while in the common duct, with liver duct and pancreatic complications, the mortality was about 12 per cent. We must not forget that the mild and safe stage for operation comes to nearly all suffering with the disease at some early period. Another consideration is that about 4 per cent of all such cases present primary cancer of the liver ducts with its apparent origin about an impacted stone, which is a further protest against delay.

In pelvic disease the woman with the large fibroid uterus should have the present conditions explained, as well as future possibilities in growth and degeneration or change in structure, as no one is more vitally interested than the adult patients themselves.

In pus tubes, the case often is not seen in the early stages. In the second stage of local diffuse peritonitis, like that in certain types of appendicitis, it is often considered advisable to aid nature

in her efforts to resist and sterilize or, at least, develop an immunity to the infection. In the third stage when this has occurred and the pus is in the tubes or localized, an operation can be undertaken to remove the disease. In this stage the immunity is often such that a moderate amount of leakage from the sac of retention will not call for drainage or create even severe symptoms.

There is certainly a proper time for operation upon cancer, and it is unquestionably early, while the growth is still confined to the original structure of origin or the lymph nodes of drainage. Cancer treatment has passed through many peculiar phases, a large number of which were due to the faults of the profession through imperfect and especially delayed and often ill advised treatment, the results of which were such that it has kept up innumerable cancer cures and methods of treatment among many, both in the profession and out of it.

About one-half the cancers affect the alimentary tract. The paste quack could not work here, and yet in external cancer he did nearly as good work up to 25 or 30 years ago as was done by the profession. He has nearly lost cancer of the breast from his field because even the laity has learned about the glands of the axilla and the dangers from this source. He will lose the lip also as soon as better work is generally done in this region by the surgeon, and also when the surgeon explains that cancer of the lip, like cancer of the breast, does not destroy locally, but destroys by extending through the lymph system, death being essentially from secondary metastatic growth.

In considering cancer of the rectum we find the disease in a removable structure which is slow to disseminate infection, and yet approximately only one-half of the cases are discovered at the operable period, as far as curability is concerned, being usually called external or internal piles. This is due to the lack of marked symptoms in the early period, to the carelessness of the patient, and often to the failure of the physician to examine, although he prescribes. Scientific progress and a better knowledge of the changes in the body incident to disease and repair, have greatly reduced the field for drugs, even at a time when some of our best known therapists, under the guise of original articles, for revenue only, are adding to our enormous list of remedies.

New methods of stimulating nature to develop favorable cell changes are growing in favor. Medicine and surgery, not through effort, but by reason of natural laws, are becoming more closely associated. The coming man is not the surgeon, nor the internist, but the diagnostician.

RETROPERITONEAL SARCOMA*

BY W. D. SHELDEN, M. D. AND J. FRANK CORBETT, M. D.

MINNEAPOLIS

The subject of retroperitoneal sarcoma has received little attention because of the comparative rarity of the condition. Lobstein first described the disease in 1825. In 1904 Steele collected ninety-six cases from the literature.

The following case belongs to the upper central tumors, and as these are rare it seems of sufficient interest to be reported.

John T., aged 35, laborer; family history, negative. He had measles at 10 and mumps with double orchitis at 24. At 27 he contracted syphilis for which he was treated six months. Subsequently he had two attacks of gonorrhoea. He has used alcoholics to excess at times. In 1903 he received a severe injury on the right cheek which fractured the malar bone and caused a permanent peripheral paralysis of the facial nerve.

ter, with no cramps or colic, and it has continued uninterruptedly to the present time. Although the intensity of the pain varies a great deal it has for the most part been very severe. After about a week he began to complain of stiffness and pain in the back on bending, and also of a similar sensation in movements requiring the use of the psoas muscles. From July 10 to 25, he was under observation at the City and County Hospital at St. Paul, during which time he ran a low temperature, ranging from 100°-102°. His pulse averaged about 95.

About July 15 he began to have pain and swelling of the legs, mostly on the right. The swelling came on quite suddenly and extended as far as the hips. The swelling was quite firm, and the legs were about one-third larger than normal. After July 25 the swelling of the legs improved somewhat, but when he entered the City Hospital of Minneapolis it again increased, and at about the same time he first noticed that the veins over the abdomen were prominent and distended.

Of late he has complained of tenderness and pain in the right testicle, and at times it appears to be somewhat swollen. Since the onset of the pain he has noticed that he must urinate more frequently, usually about two or three times during the night. There is no pain connected with urination.

He complains of no disturbance of the stomach. The bowels are somewhat constipated. There is no shortness of breath or pain in breathing, and no cough.

Physical Examination.—Patient is well developed, but shows a considerable loss of flesh. He is sallow with fair color to the mucous membranes. Hemoglobin, 70 per cent. He lies on the right side with the legs drawn up. Extension of the legs greatly increases the pain in the back. There is no dyspnea. The feet are swollen. The tongue is coated. The arteries are somewhat thickened, and the tension of the pulse is slightly increased.

Lungs and heart findings are normal.

Examination of the abdomen was especially difficult because of the almost constant tension of the recti muscles, and it was only after patient endeavor that the following obscure findings were made out:

The contour of the abdomen was quite normal and remained so throughout the entire ill-

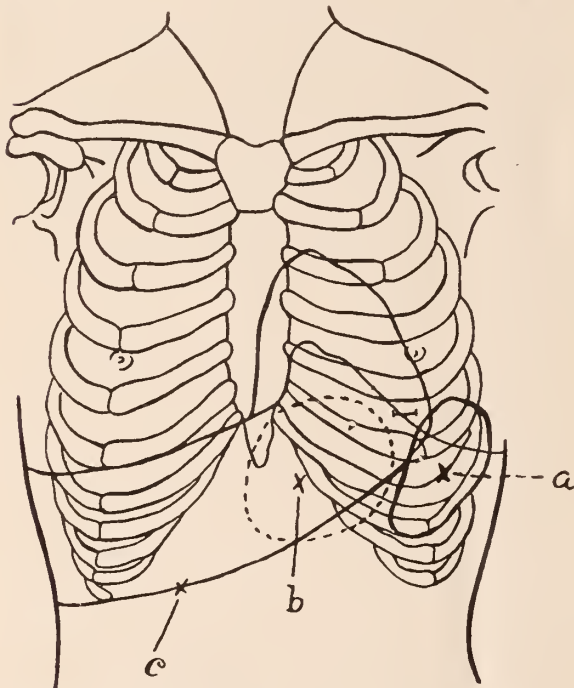


Fig. 1. a, stomach tympany; b, dull area within liver dullness; c, lung border.

Present Trouble.—The patient was well and hearty until about July 1, 1905. Weight, 192 lbs. One afternoon during an eleven-mile walk he began to have pain in the right side which radiated down the back of the thigh and into the right groin. The pain was of a steady, aching charac-

*Read before the Minnesota State Medical Association, June 19-21, 1906.

ness. The veins of the abdomen and lower thorax are tortuous and distended on both sides. The blood flows toward the thorax in all these vessels, even in the groin. The veins about the umbilicus are also distended, and the blood current is also toward the thorax.

The following notes were made at the examination on Oct. 26:

The abdominal walls are tense. The left kidney is palpable, and it seems to be normal in size and shape. It moves with respiration. The aorta is easily palpable at the level of the umbilicus, but above this it is difficult to follow, and its pulsation becomes rapidly less distinct in force and height of the wave.

In the upper part of the abdomen the posterior resistance is much sooner reached than at the level of the umbilicus, and in this region a comparatively large, smooth mass with an uneven surface, can be made out. The fullness can be felt to extend nearly to the left kidney.

The stomach tympany is considerably to the left of the usual position.

The liver shows normal outlines on percussion with this unusual peculiarity, that a very dull note was elicited over an area extending from the lower border of the left 5th rib to the costal arch in the left parasternal line and from slightly to the right of the median line to the left mammillary line. This area of dullness was bounded on the left by the stomach tympany, and indeed, it occupied the position usually assumed by a portion of the stomach tympany. The dullness remains constant in the dorsal and both lateral positions. The dullness was more intense than over the more bulky portion of the liver to the right. The tympany of the intestines began at the normal height. These peculiar percussion findings remained constant throughout the whole period of observation and were confirmed by repeated examinations. At no time did the stomach tympany appear to the right of the limits given. Posteriorly the percussion note below the costal arch was dull tympanitic down to the pelvis, and no difference could be made between the two sides.

The spleen dullness was 2 cm. above the costal arch, and the organ was not palpable.

The rectal examination was negative.

The right epididymis was somewhat swollen, and it was very tender. The left was also tender.

The urine was uniformly of low specific gravity, ranging from 1008 to 1014, and for the most part it was free from albumin or sugar. On October 5th a trace of albumin was recorded in a urine of 1009 sp. gr., and on October 25th many red corpuscles were found. On Novem-

ber 17th and for two or three days following, the urine on several occasions was bloody, and several small blood clots were passed.

On November 20th he developed pain in the right chest near the nipple which was increased on deep breathing and coughing. On the following day his temperature rose to 103°, and remained at that point for several days; then it gradually subsided, reaching 99° in four or five days. Cough came on with the pain, and for four or five days the sputum was streaked with blood; later it became yellowish and foamy. Friction rubs were heard continuously to the end over this area, but no changes were detected on percussion or palpation anywhere in the chest.

About December 15th a slight systolic pulsation was noticed in the epigastrium, and over this area a prolonged systolic murmur of moderate intensity was heard. No thrill was obtained, and no vessel tones were heard at that point. At the same examination the other physical findings were practically as before with the exception that the pulsation of the aorta was even less palpable than before.

The sensation of the extremities was normal, as were also the reflexes.

The stomach examination showed that HCl was present. No signs of retention of the contents were present, and nothing abnormal was found with the microscope.

It was perfectly evident from a superficial examination of the patient that there was present some disorder which was producing rapid emaciation and grave circulatory disturbances.

The arterial circulation was practically normal throughout.

The absence of cyanosis or distention of the veins of the face or upper extremities was sufficient evidence that the superior vena cava was free, and the lack of dyspnea or signs of passive congestion of the liver showed that the swelling of the lower extremities was not due to cardiac insufficiency.

The presence of edema of the legs associated with distension of the abdominal veins in which the blood flowed toward the thorax, showed that the circulatory disturbance was in the venous system and that the obstruction was probably located in the inferior vena cava or its branches.

Careful search throughout the lower abdomen and rectum failed to locate any abnormality along the lower vena cava or iliacs.

The data elicited to assist in locating the morbid process were as follows:

1. The area of dullness under the liver.
2. The displacement of the stomach tympany to the left.

3. Absence of aortic pulsation in the epigastrium.
4. Presence of an indefinite mass.
5. Psoas symptom.
6. Rigidity and fixation of the spine.
7. Pain in the back and testicle.
8. Hematuria.

Although many of the findings were indefinite and difficult of interpretation, nevertheless when considered collectively they seemed to locate the process with reasonable certainty in the retroperitoneal space between the diaphragm and the kidneys and along the aorta down to near its bifurcation. They also indicated that the process was widely spread and that it involved many different structures.

In many of the reports given by Steele, mention is made of swelling of the legs, and it is usually given as a sign of pressure upon the inferior vena cava by the tumor. In none of the reports to which I had access did I find any positive evidence in the post-mortem records as to the exact condition of the vein and its relationship to the tumor growth. The idea of pressure naturally follows when in the presence of a large retroperitoneal tumor, swelling of the extremities occurs, but a careful dissection of the vein is necessary to prove that the obstruction is due to simple mechanical causes. In this case the early appearance of the signs of venous obstruction and the absence of a tumor of sufficient size to produce pressure, lead me to favor the idea that the integrity of the vein itself had been attacked and that the obstruction to the circulation was due to the obliteration of the lumen of the vena cava by the tumor growth.

The fact that the pulsation of the aorta was practically lost, gave valuable indirect evidence that the vena cava was also included in the mass, which condition was decidedly favorable for the early penetration of the thin-walled vein. Later, the appearance of a long systolic murmur in the epigastrium was of value to show that the elasticity of the resistant aorta had also suffered.

In consideration of the given data the following ante-mortem diagnosis was made.

1. Tumor, probably sarcoma—retroperitoneal—involving the inferior vena cava (thrombosis) and also the aorta, surrounding both; the right psoas muscle and the tissues about the vertebral column; and both lumbar plexuses, mostly the right.
2. Kidney, venous obstruction or involvement of the substance.
3. Displacement of the stomach to the left.
4. Pleurisy, left, old, and recent; cause, in doubt.

5. Peripheral paralysis of the seventh nerve, right.
6. Slight arteriosclerosis.

PATHOLOGICAL FINDINGS

By J. FRANK CORBETT, M. D.

On opening the abdomen a large tumor is felt underlying the viscera. Above and to the right, the left lobe of the liver covers about one-third of the tumor mass. The stomach lies diagonally over the left upper part. This leaves only a small area covered by intestines (movable viscera). The stomach has been pushed downwards so that the pancreas lies anterior to the tumor and above the lesser curvature of the stomach. The pylorus is on a level with the umbilicus, and the fundus reaches to the mamillary line. A median section through the tumor and the attached vertebræ shows the outline of the tumor to be that of a triangle, with the base lying along the vertebral column and covering the entire centra of the twelfth dorsal, and the second and third one-half of the fourth lumbar vertebræ. The base of the triangle measures six and one-half inches and the altitude three inches, and the apex is opposite the first lumbar vertebra. The tumor mass apparently originates from the periosteum of the vertebra and infiltrates the bodies of the vertebræ causing them to encroach on the spinal canal.

Sectioned transversely the tumor is diamond-shaped. On the left it extends to the kidney and ureter, but does not involve these structures. On the right the tumor extends over three and one-half inches to that side of the median line, involves the pelvis of the kidney, and encroaches upon, but does not invade, the parenchyma. The total width of the mass is six and one-quarter inches. The part lying next to the vertebræ is very dense, and in it may be seen the remains of the psoas fascia. The ureter on the right side, while not obliterated, has been pressed upon to such an extent that a kink exists, with resulting stenosis. The pelvis of this kidney is filled with dark fluid. The left ureter is patent.

In the lower lobe of the left lung is a large cavity, irregular in shape and averaging two inches in diameter. The walls of the cavity are well defined and fibrous. Tracing the course of the right pulmonary artery we find a thrombus at the main branch supplying the cavernous area. This thrombus is attached only at one point in the wall, and extends as a firm cylinder into the lumen of the artery. It is one inch in length, by three-eighths of an inch in diameter. Several smaller branches extend from the large thrombus into the smaller bifurcations of the artery. The

thrombus is entirely free from the coats of the artery except at the point of attachment. The pleura is densely adherent over the cavity, and forms a part of the cavity walls. Several small oval masses of sarcoma occur on the pleura at this point. The right lung presents several metastatic tumors along the course of the pulmonary artery.

The heart presents a small metastatic tumor at the apex. The aorta tunnels through the tumor a little to the left of the median line, but it is nowhere encroached upon. The vena cava is completely obliterated by the growth below the level of the first lumbar vertebra. The tumor has extended through the coats of the vein by direct growth, and throughout the mass the lumen is absolutely obliterated. The vein becomes a hollow tube at the first lumbar vertebra. At this point the growth may be seen projecting into the lumen of the vessel, but does not entirely fill it. The portal vein is not affected.

The liver is free, smooth, smaller than normal, and cuts freely. The lobular markings are indistinct. The small intestines are normal. The large intestine atrophic. The intervertebral discs protrude.

MICROSCOPIC FINDINGS

A block from the anterior surface of the main tumor mass presents the following types of cells:

A. *Spindle Cells*. First type, oval-shaped nuclei, about twice as long as broad and having well marked chromatin threads.

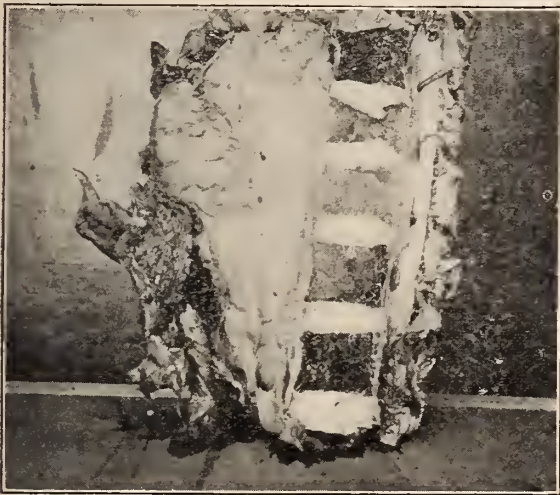


Fig. 1. Gross appearance of tumor, longitudinal section.

Second type, slender nuclei, six times as long as broad, curved-shaped and markedly granular. The protoplasm of both of these types takes a good eosin stain.

B. *Irregularly-shaped Cells*. The nuclei are nearly round. The stain is very deep. The pro-

toplasm spreads out in irregular finger-like processes, and takes some hemotoxylin. These cells are imbedded in a matrix of amyloid material.

A block from the main tumor mass near the vertebrae shows much the same type of cells, only that they are fewer in number and the amyloid ground-work more marked. Some fibers derived from the fascia of the psoas muscle give certain blocks a false appearance of fibroma.

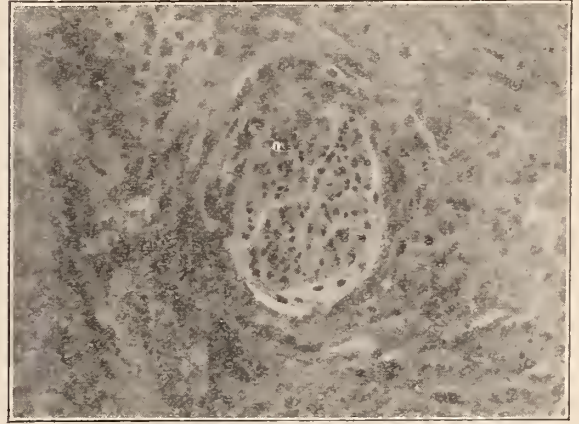


Fig. 2. Wall of the vena cava showing lymph space with sarcoma (Zeiss-4mm. obj.).

A block of tissue from the vena cava at the point of thrombosis presents the following sequence: First, a serous coat, the remains of the peritoneum; second, a layer of connective tissue abundantly supplied with blood vessels; third, a wide zone of spindle-shaped cells interspersed with a few fragments of muscle tissue; fourth, a wide zone of muscle tissue interspersed with a few spindle cells; fifth, a very wide zone of degenerated cells (type B) and surrounded by



Fig. 3. Infiltrated lymph spaces in the wall of the collateral vein.

amyloid degeneration. In the outer part of the vein wall in the area of densest spindle-celled

accumulation is a small lymph space packed with newly-formed sarcoma cells. By the side of this is a normal vasa vasorum.

The nodules on the pleura consist of oval masses of sarcoma. The pleura consists of scar tissue.

In a block from the mass in the pelvis of the kidney and from the kidney, the main tumor mass is degenerated in places and extends to the fibrous coat lining the pelvis where it forms a sharp line of demarcation. Lymph spaces packed with sarcoma cells occur in the new vein walls. The tumor immediately contiguous to the capsule is well supplied with blood vessels, and the tumor cells are typical. The kidney substance is much altered; some of the glomeruli are greatly shrunken and all are flattened. The collecting tubules are dilated, but are otherwise normal. There is some thickening about the glomeruli. The blood vessels are increased and are of large size with thickened coats. The pelvis of the kidney contains blood vessels with swollen endothelium.

A block of tissue through the pulmonary thrombus shows air sacs about the thrombus filled with desquamated epithelium and red and white blood cells. The thrombus is a mass of spindle-shaped cells with no degeneration. Many lymph spaces in the walls of the vessel contain young sarcoma cells.

SUMMARY

In general it may be said that this is a spindle-celled sarcoma involving the various viscera mentioned. In close proximity to organs from which an abundant blood supply can be obtained, typical spindle cells occur. Remote from these organs the blood supply is scanty, and amyloid degeneration is marked.

It is apparent that the tumor originated from the region of the centra of the vertebræ. The fact that the lymphatics of the veins are found packed with young sarcoma cells, demonstrates that the spread of the disease along the course of the veins is through the direct agency of the lymphatics of the vein walls. The complete obliteration of the vena cava is remarkable. In this are included the renal veins, so that the kidney was dependent upon the compensatory dilatation of small peripheral veins, anastomosing with those of the back. The exact route of the return blood from the lower extremities is not demonstrable.

DISCUSSION

DR. W. H. MAGIE (Duluth): I wish to state that I recently had a case of retroperitoneal sarcoma that originated in the testicle, and passed up the cord into the peritoneum and involved almost the entire abdominal cavity. This case is of a similar nature although not so extensive. Our case originated in the testicle. It had been diagnosed carcinoma, but was really a sarcoma, and I refused to operate. At that time the

abdominal condition was not made out and the case remained in the hospital until he died. The post-mortem showed the involvement of the glands of the abdominal cavity as well as the post-peritoneal glands. The disease worked up the cord posteriorly. The tumor must have weighed in the neighborhood of twenty pounds.

DR. J. FRANK CORBETT (Essayist): I wish to speak of only one point that was brought up in the discussion relative to secondary retroperitoneal sarcoma. That is that sarcoma of the testicle may be followed by involvement of the retroperitoneal glands. This is illustrated by a specimen I received in the laboratory a few days ago. The specimen was a large lymphosarcoma involving the testicle and the retroperitoneal glands. These tumors cannot be strictly classed as retroperitoneal.

DR. W. R. SHELDEN (Essayist): I have nothing special to add. The case deserves consideration because such tumors are exceedingly rare in this location, and on account of the indefinite findings these diagrams present many difficulties.

CANCER OF THE SIGMOID AND RECTUM*

BY CHARLES H. MAYO, A. M., M. D.

ROCHESTER

With some modifications the curability of cancer is generally accepted. The disease is more rapidly disseminated in the young because of the activity of their lymphatics.

The large bowel is the natural drier or absorber of fluids, but it has a limited lymph drainage.

Cancer of the colon is a disease in a removable structure, and may remain essentially local for a long period.

In the sigmoid, if the tumor is not removable, short-circuiting of the bowel is advisable.

Low cancer of the rectum can be removed by the perineal route.

Those cases which lie above easy reach are best removed by a combined operation, abdominal and perineal. If the muscular tissue and nerve tissue can be preserved, the anal outlet is maintained; if it must be destroyed, an inguinal anus is made. If the cancer is within (easy) reach and inoperable, curetting and cautery are preferable to colostomy.

In five years W. J. Mayo and I, usually working together, have operated upon 26 patients by the combined method, with the following results:

Seven died from the operation within one month.

Eight cases were operated upon too recently to be of value, but the patients are alive and well.

Seven lived over one year; five are alive now.

Five lived over two years; three are alive now.

Three lived over three years; two are alive now.

As there are only four who survived the operations made over three years ago, and 50 per cent are alive and well, the results of cure are favorable, although the operative mortality is high.

*Author's Abstract of a paper read before the American Surgical Association, at Cleveland, Ohio, June 1, 1906.

ACUTE GONORRHEA IN THE MALE*

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Instructor in Dermatology and Genito-Urinary Diseases, University of Minnesota

MINNEAPOLIS

Mr. President: I wish to thank you and the gentlemen of this Society for the invitation to read this paper. To be invited to join the only society in the Northwest which has a limited membership is an honor which I duly appreciate.

I chose the subject of acute gonorrhoea for this paper because gonorrhoea is one of the most prevalent of diseases, one which every physician, no matter whether located in the city or the country, is called upon to treat, one in which the general practitioner has little interest, and whose importance he apparently does not appreciate. If every young man who, during the past ten years, has consulted a physician about an infection with gonorrhoea, had had it impressed upon his mind that he was suffering from a serious disease—one which, if not given proper care, might endanger, not only his own health, but that of the girl he might marry, the terms "a little dose of clap" and "as soon have the clap as a bad cold" would long since have passed into disuse. Who dare say they have? The laity reflects the medical mind; it does not think lightly of those diseases physicians are known to dread, nor does it dread those diseases physicians make light of.

As the different varieties of epithelium do not offer the same resistance to the growth of gonococci, it is necessary, in order that the symptoms of gonorrhoea may be properly understood, to keep in mind the character of the epithelium in the various divisions of the urethra. The fossa navicularis contains pavement epithelium, several layers thick. The pars pendula is covered with cylindrical epithelium, which consists of three layers of cells—the superficial layer of cylindrical cells, the middle layer of transitional cells, and the deep layer of cuboidal cells. The membranous portion again contains pavement epithelium, and the prostatic portion, cylindrical.

One other anatomical fact deserves mention, and that is that the urethra is a collapsed tube. It has virtually no lumen, or, if any, it is infinitesimal. It is, however, very elastic. What we usually understand as the caliber of the urethra is rather the point to which it can be dilated without injury. The glands of the mucous mem-

brane are distributed throughout the pendulous and prostatic portions, therefore in those parts which are covered with cylindrical epithelium.

In 1879 Prof. Neisser proved that gonorrhoea is due to infection with a diplococcus, which we know as gonococcus. In 1887 E. Bumm noted that this diplococcus of Neisser was found in the body of the pus cell, but never in the cell nucleus; also that it did not penetrate the epithelial cells, but grew on the surface of them. These facts, together with the fact that when stained the germ proved to be Gram-negative, soon gave it a positive diagnostic value, so that in a very short time the finding of an intercellular Gram-negative diplococcus gave a diagnosis of gonorrhoea. This opinion became so firmly rooted in the medical mind that to-day very few physicians can be found who do not believe it absolutely to be a positive proof of the presence of gonorrhoea. Observers have at different times reported having found Gram-negative diplococci and intercellular diplococci in the urethra, which cultures showed not to be gonococci. Galewsky and Steinschneider, in a series of cases, proved the Gram-stain to give positive results in 95.53 per cent of cases; that is, in 95.53 per cent of those cases in which Gram-negative diplococci were found, the organism proved on culture to be gonococci, and in 4.47 per cent proved to be some other germ. This leaves just enough shadow of doubt so that when a case of gonorrhoea is reported as having been cured in a very few days, it gives rise to the thought—perhaps it was not a gonorrhoea.

That accidental infection with gonorrhoea does occur there can be no question, but such infections are rare, sexual intercourse being the usual method. A consideration of the social position of the source of infection is instructive. Statistics on this line are not easily procured. Those given by Fournier some years ago are still the best obtainable. In a series of 384 cases he found the infection to come from—

Public prostitutes	12 times
Persons secretly living lives of prostitution	44 times
Mistresses and theater women	138 times
Working girls	126 times
Servant girls	41 times
Married women	26 times

*Read before the Minnesota Academy of Medicine, December 6, 1906.

When we look at this table we are struck at once by the low number of cases, 3 per cent, coming from public prostitutes, and the high number of cases, 7 per cent, coming from married women. These statistics were gathered in Paris, where all public prostitutes are under police surveillance, and are examined twice a week by police surgeons. Any girl found to have an active venereal disease of any kind is sent at once to a detention hospital, there to remain as long as she shows symptoms of the disease.

With married women the case is different. A man and a woman are living together, both apparently in perfect health. A third person appears on the scene and immediately acquires a gonorrhoea. When questioned he will say: "It can't be possible—this woman lives with her husband, and he's all right." The explanation is this: A young man has an attack, or repeated attacks, of gonorrhoea, and apparently recovers. He has seen no sign of the disease for months, and, supposing himself to be well, wishes to marry. He consults a physician, who, after no other examination than a few questions, gives his consent. If you will examine the urine of this man, you will find it to contain mucus and pus shreds, the tripper-fäden of the Germans. He has chronic gonorrhoea. His wife may acquire from him gonorrhoea, which occurs as a low grade inflammation, showing no acute symptoms and giving her no discomfort, or, if any, so little that she blames it on her changed mode of living. This, then, is the manner in which infection occurs from apparently healthy women. It may also explain the source of infection in those cases of ophthalmia neonatorum which occur where the mother gives no history of previous trouble and the father swears on his honor that he has had no trouble since long before he was married.

The usual incubation period is four to five days. If the germ met is very virulent, it may be as short as twenty-four hours, or, if it be vitiated, it may be as long as eight to ten days. That these days of apparent quiet are full of activity and danger is shown by two cases which I will now report.

Case No. 1.—A young man who has never had gonorrhoea had intercourse with a prostitute on the 29th of April, 1904. On May 1st, two days later, he had intercourse with his fiancée. On May 3, five days after his exposure, he noticed a slight burning in his urethra, and on examination found a slight discharge. Microscopic examination showed this to contain gonococci. He immediately confessed his fault, and explained to the young lady what she might expect in case she had become infected. She noticed her first discomfort on the 6th of May, five days

after her exposure. On the 7th I was able to demonstrate gonococci in a specimen taken from her urethra.

Case No. 2.—A man who had had repeated attacks of gonorrhoea was exposed to infection on November 22, 1904. On November 25th, having felt no discomfort, he had intercourse with a married woman, who, according to her statement to me, up to this time had never had any disease. On November 26th he discovered something amiss, and informed the woman what she might expect, and on November 29th, four days after her exposure, they were both patients of mine.

The subjective symptoms of the disease begin at the end of the period of incubation as a slight sensation of tickling or burning in the fossa navicularis, only enough to give a feeling of uneasiness. This rapidly increases to a well-marked burning and slight pain during urination. An examination of the meatus will show only a light, mucous, or milky-white discharge, which may be very scanty, just sufficient to cause a stickiness of the lips of the meatus. Under the microscope it will be found to contain gonococci and numerous epithelial cells, but very few leucocytes. The urine at this time will be found to contain a very light mucous cloud and numerous light shreds. Within the next three or four days the light tickling or prickling sensation increases to a decided burning and pain, the meatus becomes reddened, and the discharge increases in amount and changes to a thick, creamy-yellow pus, which contains numerous gonococci and pus cells, but few epithelial cells. The first portion of the urine is now clouded with pus, the second portion remaining clear. During the next ten days, as the disease spreads further and further along the urethra, these symptoms increase in severity, the discharge becomes more profuse, the mucous membrane becomes swollen and inelastic, and the urination is accompanied with a good deal of pain and burning. In very acute cases the inflammation becomes so severe that the whole penis may become the seat of a heavy, aching pain, and the urine is passed in a thin stream, or even drop by drop, accompanied by pain that is almost unbearable.

Toward the end of the second week or the beginning of the third these symptoms begin to subside. The discharge becomes less profuse, loses its yellow-creamish color, and becomes thinner in consistency, and under the microscope is seen to contain relatively fewer pus cells and more epithelial cells. The urine becomes less and less clouded, until at the end of six or eight weeks, in favorable cases, it is entirely clear, and the patient is well. In less favorable cases the discharge will almost disappear, only to reappear after some slight injury or indiscretion on

the part of the patient. After a few days this discharge again decreases, to reappear as the result of fresh insult. Each relapse is lighter than the preceding one, until at last the tissues no longer re-act to added insult, and the urine becomes clear but contains numerous shreds—the disease has become chronic. Twenty-five per cent of cases terminate in one of these two ways. In the other seventy-five per cent of cases, at the end of the second week the discharge becomes markedly lessened, but the patient begins to complain of a feeling of weight in his perineum. An examination of the urine at this time shows that the second portion is no longer clear, but contains just a light cloudiness. In 24 to 48 hours the feeling of weight in the perineum has become a dull, heavy ache, and the patient begins to complain of frequent urination, which may occur once in every two or three hours, or if the inflammation be very severe, the patient may be unable to leave his bed, urination occurring as often as every five or ten minutes. After ten days or two weeks the intensity of the symptoms subsides, and the interval between urination becomes longer and longer until a normal period is reached. The urine gradually becomes clearer and clearer, until at last it becomes entirely clear, or the disease becomes chronic.

The gonococci which enter the urethra at the time of infection come into contact with the pavement epithelium of the fossa navicularis. Pavement epithelium as a class offers great resistance to the growth of the gonococcus. The gonococci are able to grow on its surface, but not to penetrate and grow down through it into the subepithelial tissue. When the gonococcus comes into contact with this epithelium it multiplies and spreads out over the surface until it passes the boundary of the fossa navicularis onto the cylindrical epithelium of the pars cavernosa. On this cylindrical epithelium it not only continues to spread on the surface, but it passes between the epithelial cells, and multiplies in the interepithelial spaces, until it finally passes through the deep layer of cuboidal cells into the subepithelial tissue. Here the presence of the germ or toxin which it produces irritates the tissues, and brings about a chain of symptoms which we know as inflammation.

The epithelial cells becomes loosened, undergo mucous degeneration, and fall off. The stream of serum and leucocytes which exudes from the vessels of the inflamed area, as it passes through the tissue and between the epithelial cells on its way to the surface, is able to offer resistance to, and does check, the further advancement of the gonococcus into the deep tissues. Although the gonococcus is able to grow on the epithelium and in the underlying tissue,

it seems to find the food best adapted for its nutrition in the body of the pus cell. When the pus cell on its way from the deep tissue comes in contact with the gonococcus, the gonococcus enters it and here multiplies. The pus cell, however, continues its way to the surface of the mucous membrane, carrying the gonococcus with it, from here to be washed away by the urine.

Toward the end of the second week or the beginning of the third, when the elimination of the gonococcus from the deep tissues is complete, the inflammation subsides, and the discharge becomes more watery and changes color from yellow to whitish, and under the microscope is seen to contain fewer pus cells and more epithelial cells. At this time repair begins, and from the epithelial cells left after the acute stage of the disease, a new epithelial covering spreads over the denuded surface. This new epithelial covering is, however, not the cylindrical epithelium which originally covered the denuded areas, but a many-layered pavement variety. On the surface of this new epithelium the gonococci are still very abundant. At this time, if the patient has intercourse, drinks intoxicating liquors, or does anything to excite his circulation, the exudation from the vessels in this inflamed area is suddenly increased. This increased volume of exudate, forcing its way rapidly to the surface, cracks and tears the tender epithelium. Through these cracks and tears the gonococci again find entrance into the deep tissues, and a relapse occurs.

Gonorrhoea is a self-limited disease, but spontaneous healing demands absolute quiet on the part of the patient. Such quiet can be obtained only by resting in bed, and few men are so situated that they can say they are sick and go to bed and remain there three or four weeks without offering some explanation, and, like comparisons, explanations are odious. Therefore we have been forced to form a method of treatment. This treatment has been planned to meet, as nearly as possible, the pathological conditions. Having learned the pathology, as taught by the post-mortem and the microscope, we form our opinion of the condition of the given case by a clinical study of the character and amount of the discharge. In few conditions are the therapeutic indications more clearly shown than in gonorrhoea, and in few diseases are these indications harder to follow.

The principle of the removal of cause holds good here. We know the cause to be the gonococcus, and know it is located in the epithelium and the subepithelial tissue, but how is it to be removed? The application of a remedy which would destroy the gonococcus not only on the surface but in the deep tissue, and exert at the

same time a mild astringent effect on the inflamed mucous membrane, and this without irritation, would be ideal. As we have no such remedy, we must content ourselves with the application of remedies which have either antiseptic or astringent properties, or both, as the stage of the disease demands. Pathology teaches us that the gonococcus grows out over the surface of the epithelium, and then down between the epithelial cells into the underlying tissue. From here it is carried to the surface by the pus cell. In other words, it is eliminated by the suppuration which its presence, or the presence of the toxin which it forms, excites. Since the gonococcus is only eliminated by the pus cell, the use of an astringent during the early stage of the disease, as taught by those men who advocate the irrigation method of treatment of acute gonorrhoea, is not only counter-indicated, but is irrational to an extent only approached by the internal administration of methylene-blue.

In the early stage of the disease, when the discharge is a thick, creamy or yellow pus, the indication is for the use of some drug which will kill the gonococci on the surface, for if we can kill the gonococci growing on the surface we check the further spread of inflammation and limit the disease to a part of the urethra. At the same time the drug must not be astringent, for an astringent used at this time will check the flow of pus, and consequently retard the elimination of the gonococci from the deep tissues. Later, after the discharge has changed and taken on a whitish color and a more watery character, the indication is for the use of an astringent antiseptic, something that will kill the gonococci on the surface, and at the same time lessen the hyperemia of the mucous membrane, for in this case the change in character of the discharge has shown us that the gonococci have been eliminated from the subepithelial tissues, and are now found only in the epithelium.

The last five or six years have given us several drugs which are non-astringent antiseptics. They are the soluble albuminates of silver preparations, such as Argyrol and Protargol. These preparations do not coagulate the albumen, consequently when they are injected into the urethra they come into direct contact with the inflamed and denuded mucous membrane. They are not separated from it by this protecting layer of coagulated albumen, produced by their own action. This gives opportunity for the drug to penetrate deeply into the tissue. They must be used in a solution strong enough to be antiseptic, and at the same time not sufficiently concentrated to irritate the inflamed mucous membrane. The strength of the solution in a given case is a matter of judgment. Argyrol may be ordered in a

strength of from 1 to 5 per cent, and Protargol from $\frac{1}{4}$ to 2 per cent. The strength of the solution must be in an inverse ratio to the severity of the disease; that is to say, the more acute the disease the milder the solution, the less acute cases calling for a stronger solution. The solution must be kept in contact with the mucous membrane a sufficient length of time to allow it to exert its germicidal action. This should be from ten to fifteen minutes. The injection should be made at regular intervals, say every eight hours, and should be preceded by injections of warm water to wash the last remaining portion of the urine off the surface of the mucous membrane. After a few days the discharge will be lessened, but no change should be made in the treatment, except that as the acuteness of the inflammation subsides the strength of the solution may be increased, until it changes its character, when an astringent antiseptic should be added. This should be done, not by adding an astringent to the solution while in use, but by replacing the non-astringent injection once a day with an astringent antiseptic; then later, as the discharge lessens, the simple antiseptic may be used only once a day and the astringent twice; then, finally, the astringent may be used altogether.

The solution should be used warm, as an injection of a cold solution will cause a muscular cramp in the wall of the urethra. The amount of the solution injected should be just enough to fill the urethra, without putting in too much on a stretch. Extreme gentleness is necessary to success. The irritation following a roughly-made injection may be more than enough to overbalance the good effect derived from it.

A small percentage of cases are so acute that they do not admit of local treatment, first, because the irritation following the mildest injection is more than the benefit derived from it, and, second, because even the gentlest injection is so painful that the patient will not undertake it. In these cases we are compelled to resort to internal medication. The balsams have been for years, and are to-day the standard remedies in the internal treatment of gonorrhoea. During the past few years sandal-wood oil has come to be used almost to the exclusion of others. Its use shows equally good results, and it is not nearly so irritating to the stomach and kidneys. The action of the balsam is little understood. You are all familiar with the old experiment of Ricord. He gave the urine of a man who was taking full doses of balsam copaiva to a patient with acute gonorrhoea to be used as an injection. The patient improved, apparently proving that the action of the drug was local. Still, if you add this same urine to a culture in which gonococci are growing, it does

not check their growth, showing that when applied locally it has no effect on the gonococcus.

How the balsams act is a mystery, but their use gives good results. They are used just as other drugs are used, as the old lady uses her herb tea. We know what drugs do, but how they do it, except in a few cases where they act chemically, no man knows. So in these very acute cases we order sandal-wood in from ten to thirty drops three times a day, and only after the acuteness of the symptoms has passed away do we resort to local treatment.

Since the introduction of non-astringent anti-

septics, the number of cases in which posterior urethritis occurs has been reduced from 75 per cent to about 30 per cent. A condition which is present in only 30 per cent of cases should be looked upon as a complication, and not as a rule.

That a patient suffering from an acute inflammatory disease should keep as quiet as possible, avoiding all forms of physical exercise, that he should avoid the use of alcohol in any form, and that his diet should be light and easily digested, are facts so well established as hardly to require mention, and which certainly do not require detailed analysis.

THE MICROSCOPE IN DIAGNOSIS*

By JOHN J. CATLIN, M. D.

BUFFALO, MINN.

The advantages of the microscope in furnishing corroborative evidence in clinical diagnosis, and sometimes in definitely establishing a diagnosis when the cause of the trouble under investigation is more or less obscure, is well known to you all, and no doubt all of you have had cases to treat and care for in which the diagnosis was clear only after a microscopic examination.

The instrument is an old one and needs no description, but one thing is sure, it is not used nearly as much as it should be, and in many cases is not used at all, because of the general impression that it takes too much time and trouble to prepare the specimens and make the examination. Such is not the case, and especially where the examiner has the use of a sink and running water. The want of these is the greatest drawback to a physician's laboratory, and is the source of a great deal of inconvenience, but it is not a sufficient drawback to relegate the microscope entirely to the rear, for rinsing in pails of water, with the use of a fountain syringe with a stop-cock to cleanse slides of staining fluid, etc., works very satisfactorily, although not, perhaps, in appearance scientific.

For practical use, the physician will need, besides the microscope with 1-3 and 1-6 and 1-12 inch oil immersion lenses, a centrifuge for rapidly throwing down a sediment from urines, and a Thoma Zeiss blood-counter slide and blood mixers. This amount of apparatus is necessary in order for one to make much use of the microscope. Of course, glass slides and cover-slips and their holders, etc., are necessary, and may be included as essential apparatus.

A great deal of work can be done without the centrifuge and blood-counter, such as the agglutination test in suspected typhoid, and examinations of sputum, excretions, and tumors, but for practical purposes they are almost absolutely necessary.

The selection and preparation of proper staining fluids seems to be a quite complex affair but, in reality, it is a very simple matter. Most any stain or combination of stains may be secured ready for use, from the wholesale drug houses, or, if the physician desires, he can buy the powdered coloring matter, and make any stain he wants. The stains are not expensive, and the best are made by Gruebler in Germany. For ordinary use the only stains that are necessary, and the ones that will give the best general satisfaction are methylene-blue, acid fuchsin, gentian violet, Bismarck brown, and a combination, called Jenner's stain, the eosinate of methylene-blue. The latter stain can be procured in solution, ready to use, and keeps indefinitely. It is recommended by Simon as the best all-around blood stain and also pus stain. With it, red corpuscles are stained terra-cotta color, nuclei of leucocytes and nucleated red cells are blue, blood plaques are mauve, neutrophilic granules are purplish red, eosinophilic granules are bright red, mast-cell granules dark violet, malarial organisms, bacteria, and filariæ are blue.

The specimen to be examined is drawn out in the thinnest possible layer on a glass slide, allowed to dry in the air, and covered with the solution for about five minutes, washed in water, and dried. It is then ready for examination. Pus slides are made in the same way. All forms of leucocytes and bacteria are readily stained and

*Read before the Wright County Medical Society, January 2, 1906.

brought to view, with the exception of tubercle bacilli. Gonococci are readily stained, but in order to be differentiated from other diplococci similar in appearance they must be stained by Gram's method, requiring gentian violet and Bismarck brown. The staining of tubercle bacilli requires the fuchsin and methylene-blue. These four stains, with the cosinate of methylene-blue, are sufficient for all ordinary use.

It is not often necessary to use Gram's method of staining to demonstrate gonococci, but suspected tubercular sputum should be examined always. Fuchsin and methylene-blue are the stains used. Add one part of a saturated (absolute) alcoholic solution of fuchsin to ten parts of 5 per cent carbolic acid and filter, and your carbol-fuchsin is ready to cover the sputum smear. Heat until steaming for ten minutes, dip into 5 per cent hydrochloric or sulphuric acid, and wash off with alcohol, rinse in water, and then cover for a couple of minutes with a dilute aqueous solution of methylene-blue; wash that off with water and dry and the smear is ready to examine. This is known as the Ziel Neelson method. With a little experience the physician can make a thorough examination in less than a half hour.

Misroscopical examination of urine, using the centrifuge, can be made thoroughly in ten minutes, and will show up casts, pus cells, and blood in small quantities, that would never be suspected by appearance or chemical examination. It is in the microscopical examination of urine that the simplicity and worth are perhaps best shown.

With a little experience, a count of the leucocytes of the blood can be made in ten minutes time, and will occasionally bear witness, by showing an increase in white cells, to the presence of pus, where a simple typhoid was diagnosed; or perhaps aid in diagnosing typhoid where the trouble was in doubt.

A great deal can be told by the number of leucocytes present in the blood; and also by the form of leucocyte present in blood or pus, and by the proportion of one kind of leucocyte present to another. I will give the average leucocyte count in a number of diseases common to this vicinity. The severity of the case alters the count somewhat:

Pneumonia, 24,000. In this disease, except in very mild cases, the prognosis is especially grave in the presence of a low leucocyte count.

Erysipelas, 15,000.

Diphtheria, 25,000.

Scarlatina, 20,000.

Acute articular rheumatism, 12,000.

Smallpox, 7,000, or normal, except in very severe cases, when pustulation takes place.

Typhoid fever, below normal. This condition is so typical that Simon says, in his latest edition:

"Whenever an increase in the number of leucocytes is observed in a case of suspected typhoid fever it is more than probable that some complication exists or that the diagnosis is wrong. Exceptions to this rule are rare."

Measles, below normal.

Influenza, uncomplicated, diminished, but may be normal.

It is impracticable to go into an account of the significance of a differential count of leucocytes, but I will cite a couple of instances that may be of interest, and are claimed by authorities to be of diagnostic value.

In bronchial asthma an increase of the eosinophiles is observed quite constantly about the time of the paroxysm, and may amount to from 10 to 50 per cent, while renal and cardiac asthmas are not associated with eosinophilia.

In pus, eosinophiles are not found, except in gonorrhoeal pus.

I do not contend that the microscope should be used with the idea of making a diagnosis; but that the microscopical findings are, one of the most certain and useful of corroborative evidences, and that a few inconveniences, either imaginary or real, should not entirely force the microscope from its proper place among the country physicians.

THE COUNTRY DOCTOR OBSOLETE

The country doctor is rapidly becoming extinct as a species. The men one meets at these societies look, dress, talk and act, as the men do at any meeting of city physicians. The papers presented are quite up to the city standard, the discussions markedly above those of the city men. Therapeutics is discussed intelligently, scientifically, without undue optimism, without a trace of the silly pessimism too often assumed by the city physician to disguise his crass ignorance. The surgical experiences related would astonish some men who think the city clinics and clinicians do all of this work, or at least all that is well done.—*American Journal of Clinical Medicine.*

INGUINAL HERNIA OF THE BLADDER

First noting the rarity of the condition, C. E. Ingbert, Independence, Iowa, (*Journal A. M. A.*, August 4), reports a case in which an inguinal hernia in an insane patient becoming irreducible, was operated on and found to be continuous with the bladder. Bassini's method was followed and recovery from the hernia was apparently complete. Ingebret reviews the diagnostic symptoms and some of the difficulties that may embarrass the operation.

BID OF THE ST. PAUL MEDICAL JOURNAL

The Ramsey County Medical Society submits the following proposition to the Minnesota State Medical Association in regard to the St. Paul Medical Journal:

The Journal will become the official organ of the Association on the following terms and conditions:

The name of the Journal to be The St. Paul-Minnesota-Medical Journal. The first cover page (see enclosure) will state that the Journal is the official organ of the Minnesota State Medical Association, published for the Association by the Ramsey County Medical Society. The Journal will publish the transactions of the Association as furnished by the Secretary.

The Journal will be mailed regularly throughout the year to each member of the Association for \$1.00 per member, to be paid by the Association.

The Council of the Association shall be the advisory editorial board, may suggest the editorial policy of the Journal, so far as it relates to the Association, and may have absolute censorship over all publications relating to the business of the Association, and the publication of the scientific papers read before it.

For the current year the St. Paul Medical Journal offers to publish the transactions of the Association, and to mail a copy of each issue of the Journal containing the transactions, to each member of the Association for (75c) seventy-five cents per member, to be paid by the Association.

(Enclosure.)

THE ST. PAUL-MINNESOTA-MEDICAL
JOURNAL

The Official Organ of the Minnesota State Medical Association.

CONTENTS

Published for the Minnesota State Medical Association
By
The Ramsey County Medical Society,
St. Paul, Minnesota.

BID OF NORTHWESTERN LANCET

July 24, 1905.

Minnesota State Medical Association.

Gentlemen:—At the request of your committee, for a proposal from the Lancet, we make the following offer:

The Lancet will become the official organ of the State Society upon the following conditions:

1. We will place the editorial management of the paper entirely in the hands of the Association; and the editors elected by the Association from time to time shall have absolute control of all matter, reading and advertising, that goes into the paper, but any advertisement that is, or would be, admitted to the columns of the Journal of the A. M. A. shall not be excluded from the Lancet.

2. The Lancet Publishing Co. shall retain the business management of the paper, but such management shall be as wholly under the control of the editors as it would be were the Association the sole owners of the paper.

3. The Lancet Publishing Co. will relieve the State Medical Association from all financial responsibility in the conduct of the paper, and will require of it no financial obligation whatever, except as named in Nos. 4 and 5 hereof.

4. If the editor or editors chosen by the Association are to receive compensation for his or their services, such compensation shall be paid by the Association.

5. If the Association desires the Lancet sent regularly to its members, the Association shall pay the Lancet Publishing Co. the sum of \$1.00 per member per annum for the paper.

6. If such an arrangement as in herein outlined shall be made, it shall be for a term of years, preferably not less than five years, as shall be mutually agreed upon.

I desire to add a few words concerning Nos. 2 and 5 herein:

Concerning No. 2: A number of medical men in Minneapolis own stock in the Lancet Publishing Co., and the stock was taken upon the condition that such medical men should have absolute control of all matter that goes into the Lancet. They still have that control, and under the terms of this proposal will still retain it except such as is offered herein to the State Medical Association.

Concerning No. 5: The Lancet numbers among its subscribers several hundred members of the State Association, and if a contract were made upon the terms proposed herein, including Article 5, between \$1,000 and \$2,000 would be saved to the individual members of the Association.

Respectfully,

(Signed) THE LANCET PUBLISHING Co.,
By W. A. Jones.

CONTRACT WITH NORTHWESTERN LANCET

This Agreement made this 18th day of October, 1905, by and between the Lancet Publishing Co., party of the first part, and the Minnesota Medical Association, party of the second part, witnesseth:

That, Whereas the party of the first part is engaged in the publication of a medical journal, known as the Northwestern Lancet, and desires that the same shall become the official organ of the party of the second part and that the circulation thereof shall be increased, and for that purpose is willing that the party of the second part shall have control of the editorial management of said paper and of the matter that shall appear therein and that said party of the second part shall have the rights and privileges hereinafter set out.

Now, Therefore, It is hereby mutually agreed, as follows:

That the name of said publication shall be changed so that hereafter and during the life of this contract it shall be entitled "The Journal of the Minnesota State Medical Association and Northwestern Lancet," being the official organ of the Minnesota State Medical Association and said publication shall be and the same is hereby designated as the official organ of the party of the second part during the life of this contract.

That the editorial management of said publication during the life of this contract shall be entirely in the hands of the party of the second part and the editors chosen or designated by said party of the second part from time to time shall have the absolute control as to the publication of any matter, reading or advertising, that goes into said publication, but any advertisement that is or would be admitted to the columns of the Journal of the American Medical Association shall not be excluded.

That the party of the first part shall retain the business management of said publication, except as herein stated, but such management shall be as wholly under the control of the editors chosen or designated by the party of the second part as to the matter that appears in said publication as it would be were the party of the second part the owner of said publication. That the party of the first part will assume all the financial responsibility in the printing and publication of said publication and the party of the second part is to be under no financial obligation in connection therewith except as herein stated.

That the party of the first part shall not be re-

quired to pay any compensation to the editor or editors chosen or designated by the party of the second part for his or their services. Any such compensation which must be paid shall be assumed and paid by the party of the second part.

That the party of the first part will publish and send regularly to any of the members of the party of the second part the said publication, the party of the second part paying to the party of the first part therefor the sum of one dollar per member per annum for the publication, payable monthly, pro rata for all members to whom it may have directed said publication to be sent, until the sending of said publication is countermanded by the party of the second part.

That said publication shall be continued at the times as heretofore published and this contract shall be in force until and including December 31, 1907. This contract to begin with and include the November 1st, 1905, number of the Northwestern Lancet.

THE LANCET PUBLISHING CO.,

By W. A. Jones.

MINNESOTA STATE MEDICAL ASSOCIATION,

By W. S. Fullerton,

F. A. Knights,
Thos. McDavitt.

If the Association has no *official organ*, as is charged, it is manifestly not the fault the journals making the above bids, for each must have been intent on the same thing when penning the second paragraph in each of these bids. In fact, the identity of the language of these paragraphs would seem to convict the bidders of collusion.

The Council, two members being absent, unanimously accepted THE LANCET bid, and the House of Delegates ratified it with only one of the three Ramsey County delegates in opposition, and with no other opposition.

This editorial also says that "permission was given to use the deliberate misstatement which appears on the front cover of that journal" (the words "Journal of the Minnesota State Medical Association").

Gentle reader, do not think that we object to the *mild* words "deliberate misstatement" in this assertion. Oh, no; that is not what hurts us, but our objection is to the gentle word "given," which robs the Council committee of no small part of its service. With due respect to the committee, we want to say the word should have been "forced," for the Lancet Publishing Co. felt that the demand for the change in the name under so short a contract might ultimately work a great financial hardship to it, but the concession was made, and it is only fair to give the committee credit for its zeal. The St. Paul Journal was equally jealous of its name as is shown by its bid.

Although the contract lays upon the Association the cost of editorial work, the present editor hastens to say that he draws no salary for his services, and he asks none because the real drudgery and time-exhausting work of the editorial office, namely, the preparation of manuscripts for

the printer, the collection of news, proofreading, and many other details of editing, are done by Mr. Klein, the publisher.

Our readers need not be told that this contract conveys to somebody "absolute control" of THE JOURNAL-LANCET. Interpreting this instrument by its spirit, rather than by its letter, the individuals who negotiated and signed it at once placed a very important part of this control in the hands of the Council committee and this committee, the editor, and the publisher held an early conference to consider what advertisements should be dropped. The result of that conference was the dropping of over \$2,000 worth of advertisements that had long appeared in THE LANCET, as well as in many of the leading medical journals of the country, including the Journal of the A. M. A. This large amount of business, which was practically net profit, was dropped without a word of opposition; and, moreover, the editor and publisher, after the conference, concluded to drop several advertisements that had been accepted in the conference. And this is not all: the cost of publication, with a reduced income, has been very largely increased by the demands of our work, and this cost has been unhesitatingly incurred by the publisher. For instance, our last issue required, in order to print the proceedings in one number, double the average amount of composition and an increase of 50 per cent in the number of reading pages.

THE EXECUTIVE OFFICER OF THE MINNESOTA STATE BOARD OF HEALTH

The attention of the readers of THE JOURNAL-LANCET is called to the letter from Dr. H. M. Bracken in this issue. The letter will explain itself, and should be read by every physician in the state. The executive officer of any state board of health must have strength of character to carry out the policy of the department which he represents.

The laws governing the public health were formulated by the legislature. The new code laws were compiled by a committee appointed expressly for this purpose, and did not originate in the office of the State Board of Health. Dr. Bracken protested that some of the laws gave the Board too much power, but the revisionists did what they knew was best after consulting the laws of other states. The rules for the carrying out of the laws were carefully gone over by a board of nine physicians after many meetings and consultations; nothing was done hastily. The rules were revised and re-written under the

direction of the attorney-general's office. After all of the rules were ready for a final reading the attorney-general and his associates made such changes as were essential to their fulfillment. They were again revised and re-submitted, and finally published according to law.

The executive officer of the State Board of Health is then required and obliged to see that the laws and rules are enforced. He is aided and advised by an executive committee of the Board, hence the responsibility is divided among several men, all of whom are physicians.

Complaints from all sources are heaped upon the executive officer as the sole authority for the whole department and its working. This is unfair, Dr. Bracken is doing his duty when he obeys the laws and enforces the rules laid down for his guidance by the whole Board. The position Dr. Bracken occupies is not one of pleasure; it is one of constant strain, hard work, and watchfulness. The salary is less than the income of the successful country practitioner and less than that of the heads of other departments and less than that of the judges of the district court. His work requires expert knowledge in judicial matters pertaining to the welfare of the public health. Why not help him in his efforts, and by all means support the State Board of Health in their effort to suppress disease?

CORRESPONDENCE

EXTENT OF RABIES

Minneapolis, Aug. 7, 1906.

TO THE EDITOR:

In view of the failure on the part of the profession and the general public to appreciate the extent of rabies in this part of the country, some statistics in the possession of the State Board of Health should be quoted. Since this disease is frequently not recognized by the general public, it is supposed that a very great many other cases have occurred of which there is no record.

Since January 1, 1906, there is a report of 63 human beings having been bitten by rabid dogs, one by a rabid cow, and one by a rabid cat, making 65 in all, of whom 46 received Pasteur treatment. During this time, rabies has made its appearance in 21 different localities, including the Twin Cities, Wahpeton, Red Wing, Detroit, Breckenridge, Anoka, New Prague, Montevideo, White Bear, and other places.

It is extremely difficult to ascertain the facts in relation to bitten stock, and very frequently the biting is unseen or unsuspected and a diagnosis may not be made at all. Still, during this period of seven months, 5 horses are known to

have died of rabies, 1 cow, 1 hog, and 14 sheep, 85 dogs, and 1 cat, while 181 dogs were reported as having been destroyed on suspicion.

The cost of treating the 46 individuals who received treatment during the past seven months at Ann Arbor or in Chicago, would more than support a Minnesota State Pasteur institute for a year. The remainder of the 65 individuals were not treated, although they should have been.

A Pasteur institute, possibly organized on the lines of that in connection with the State University of Michigan, at Ann Arbor, should be maintained here where residents of the state could be treated gratuitously, and non-residents be charged a sum of, say, \$100. In the new Institute of Public Health and Pathology, which will house the State Board of Health laboratories and the Department of Pathology and Bacteriology of the University of Minnesota, a Pasteur institute is arranged for. It is only a question of the expense of its maintenance.

During this period material has been received from 17 localities in the laboratories of the State Board of Health for diagnosis from 23 cases, which have included dogs, a cat, a cow, and, just a few days prior to the beginning of the year, although not included in the above statistics, material from a fatal case in a human being.

Wherever a human being has been bitten, particular pains should be taken to send material for laboratory diagnosis to the State Board of Health Laboratories, Minneapolis. No preservative should be used, and the head of the animal and a considerable portion of the neck should be forwarded immediately, packed in ice, so as to prevent decomposition. A report based on the microscopic demonstration of Negri bodies in the cerebellum or horn of Ammon can be given in from three hours to two days, and the result of subdural inoculation, in the production of rabies symptoms, reported in from two to five weeks.

F. F. WESBROOK, M.D.,
Director of Laboratories,
Of the State Board of Health.

TO THE MEDICAL PROFESSION OF MINNESOTA

St. Paul, Aug. 6, 1906.

TO THE EDITOR:

An official who is conscientiously trying to do his duty, does not have to heed the criticisms of "yellow journalism." It has been my misfortune (or fortune) to fall under the criticism of one particular "yellow journal" in Minnesota, a paper that is, as a rule, anti-medical.

I have given no attention in the past to criticisms by this journal, nor shall I now, in the lay

press, but having at times been called upon by brother physicians to explain these criticisms I have determined, through the medical press, to explain myself in the future when attacked by the "yellow journals" on matters pertaining to my duties to the state.

Recently, the Minnesota State Board of Health, exercising the duties placed upon it by the legislature, formulated certain relations which received legal publication through the state printer, in the Pioneer Press, of St. Paul. Among these regulations is one relating to smallpox (Rule 74), which seems to have exasperated the anti-vaccinationists, and through their St. Paul paper they say:

"Once the state required all children in the public schools to be vaccinated as a precedent to admission. Some folks objected. They formed an organization and went to the legislature and asked it to repeal the law. While not at all sharing their hostility to vaccination, the Dispatch thought that the law went too far in making it compulsory and depriving children of school unless complied with. The legislature agreed and eliminated the compulsory feature.

"Bracken resents this intrusion by ignorant legislators into his domain, the public health. So he repeals the law. Not in direct terms, for that might raise a rumpus with consequences unpleasant for him. He formulates Regulation No. 74, which reads as follows: In the event of any school child having smallpox, or having been exposed to the disease while in attendance at school, the building where such child is in attendance shall be closed by the order of the local health officer and kept closed until the place has been thoroughly disinfected and cleansed under the supervision of said health officer.

"In the event of the board of education having passed a regulation requiring vaccination of all teachers and pupils, the school may be opened after the above disinfection and cleansing; otherwise the school shall be kept closed until the local board of health, with the approval of the State Board of Health, directs otherwise.

"That is to say, if the school board has not passed such a regulation, the school shall be kept closed until Bracken says it may be opened. And, *per contra*, if the school board has passed the rule requiring all teachers and pupils to be vaccinated, then Bracken will not let the school be opened until all teachers and pupils, have been duly virused. If this 'Regulation 74' does not mean that it means nothing. And, we doubt not, Bracken intends it shall have that meaning—vaccinate all or shut up school.

"The state decreed very differently. Section 2131, in subdivision 8, prohibits a school board 'or any public board or officer' from compelling the vaccination of a child. Only in case of an epidemic of smallpox can a school board exclude a child—not the whole school—because not vaccinated, and not even then if the child's physician certify that vaccination would be dangerous to it. Nothing about teachers being vaccinated, nothing about school boards 'requiring all teachers and children to be vaccinated,' and nothing about excluding the children, even during epidemics, until Bracken says they may go to school.

"And the state which gave Bracken the authority and salaries, and pays for his La Toco cigars, or used to, expressly provided that his decrees must not conflict with any statute or with the charters of any city of the first class."

This is about the interpretation we would ex-

pect anti-vaccinationists to make of this regulation.

The last legislature did see fit to remove from health officers the burden of compulsory vaccination of school children, and place it upon boards of education. For this, health officers should be truly thankful. They, as well as practicing physicians, have borne patiently and without complaining an immense amount of abuse for trying to prevent the presence of smallpox.

I cannot see how any sane person would expect the local board of health to do otherwise than close a school in which smallpox had appeared, and keep it closed until all danger of future infection had been removed, either by the board of education doing its duty and requiring the pupils removed by the recovery of those infected. Of course, if the anti-vaccinationists wanted quarantine restrictions removed from smallpox, I, for one, am with them on this proposition, for I believe most thoroughly that smallpox cannot be controlled or suppressed by quarantine alone, and that quarantine for smallpox, is, therefore, irrational and tiresome.

There is no other disease that can so easily be controlled, if the proper means are used (vaccination in this case), as smallpox. During the last thirty years I have been exposed to smallpox many, many times, but have never had any symptoms of the disease. It was not quarantine, but vaccination that protected me.

I, for one, am quite willing to throw off all restraint from smallpox patients, and allow those who abuse vaccination to take their chance with this disease. I am very sure that those who are properly vaccinated would have nothing to fear from such action.

H. M. BRACKEN, M.D.,

NEWS ITEMS

Dr. P. N. Trooien has located at Toronto, S. D.

Dr. Lee B. Greene has located at Monango, N. D.

Dr. Leif Almklow has located at Cooperstown, N. D.

Dr. M. H. Claggett, of Menno, S. D., will move to Kentucky.

Dr. C. G. Bacon has moved from Marshall to Sauk Rapids.

Dr. I. M. Roadman has moved from Proctor Knott to Bovey.

Dr. M. A. Desmond has moved from Eagle Bend to Akeley.

Drs. Larson and Larson have moved from Park Rapids to Bemidji.

Dr. H. J. Forbes, of Winnebago City, is doing special work in Chicago.

Drs. Groves and Nicholson, of Brainerd, have dissolved partnership.

Dr. A. Kahala, of Erskine, is doing special work in New York City.

Dr. P. R. Burkland, of Vermillion, S. D., is studying in New York City.

Dr. O. G. Bean, of Walcott, N. D., has moved to Palmero, in the same state.

Drs. Finnerud and Freeburg, of Watertown, S. D., have dissolved partnership.

Dr. O. E. Rodli, of Albert Lea, has returned from an extended trip to Europe.

Dr. G. G. Kerns, of Iowa, as located at Cresbad, a new town in South Dakota.

Dr. E. Klaveness, of Brookings, S. D., has moved to Bristol, in the same state.

Dr. E. E. Torwick, of Volga, S. D., is doing special work in surgery in Chicago.

Dr. O. O. Benson, who formerly practiced at Hector, has located at Sacred Heart.

Dr. E. B. Oliver, a graduate of the University of Toronto, has located at Hecla, S. D.

Dr. Henry H. Ruger, of Devils Lake, N. D., had a severe stroke of paralysis last month.

Dr. N. W. Jones has given up practice at Wilmot, S. D., and will locate at Portland, Ore.

Dr. George Edward has moved from Lake Preston, S. D., to Midland, in the same state.

Dr. H. G. Harris, of Chicago, has become a partner of Dr. A. W. Wilson, of Wilmot, S. D.

Dr. W. R. Schmidt, of Chisholm, was married last month to Miss Edith Chappuie, of Faribault.

Dr. L. M. MacLachan, of Bismarck, N. D., is doing special eye, ear and nose work in Chicago.

Dr. Edward Darrow, who has been practicing at Akeley for the past year has moved to Duluth.

Dr. N. O. Sanders, a recent graduate of the Col. of P. and S., of Chicago, has located at Trent, S. D.

St. John's Hospital, of Fargo, N. D., will erect a separate building for the use of the hospital nurses.

Dr. C. C. Walker, who has been doing post-graduate work in Chicago, has re-located in Lamerton.

Dr. A. Lyons, of Pine City, has gone to the Pacific coast to live. He will practice in Washington.

Dr. F. D. Smith, of Oronoco, had his leg broken last month by being thrown from his buggy.

Dr. W. H. Lane has established a hospital at Miller, S. D. It will be called the Hand County Hospital.

Dr. Hugo Neukamp has moved from Fessenden, N. D., to Bowden, N. D., having purchased Dr. John's practice.

Dr. O. G. Wicherski has moved from New Ulm, where he has been located several months, to Frankfort, S. D.

Dr. J. T. Benson, who has been connected with the Hankinson (N. D.) Hospital, has gone East where he will practice.

Dr. M. M. Grove, of Dell Rapids, S. D., is home from Chicago, where he took a special course in post-graduate work.

Dr. R. R. Hogue, of Linton, N. D., has established a hospital at that place, and has accommodations for a dozen patients.

Dr. W. C. Chambers, who has been resident physician at the state penitentiary for some time, will begin practice at Owatonna.

The excavation for the Barret Hospital building at Glencoe has been completed, and the superstructure will be pushed forward.

Dr. F. U. Davis, of St. Clair, has sold his practice to Dr. Jesse Macbeth, of Ft. Wayne, Ind., and will locate in Faribault.

Dr. Fred Maercklin, of Ashley, N. D., has purchased an interest in the hospital at Oaks, N. D., and will move to the latter place.

St. Mary's Hospital, of Duluth, has bought up several lots adjoining its site, and will eventually greatly enlarge its present building.

The Chisago-Pine Society met at Taylors Falls. Dr. Jellison told how Chinese doctors practice medicine. Dr. Murdock banqueted the members.

Dr. W. A. Hobday has returned to Marshall, Minn., to resume practice. Dr. Hobday has been located in Louisville, Ky., for the past three years.

Dr. W. L. Palmer, of Glenville, has returned from New York, where he has been doing special work. He has about decided to locate in Albert Lea.

The semi-annual meeting of the Blue Earth Valley Society occurred last month. The attendance was fairly good, and the program was very good.

Dr. B. J. Branton, of Atwater, and Miss Alice Brown, of Minneapolis, were married last month. Dr. Branton is a recent graduate of the State University.

Drs. Durnin and Godfrey, of Russell, N. D., have dissolved partnership. Dr. Godfrey will retain the practice, and Dr. Durnin will seek another field.

Dr. G. J. Coller, who has practiced twenty-five years in Brookings, S. D., has sold his practice to Drs. Boyden and Green, and will retire from practice.

Dr. R. M. Whitefoot, who was the first physician to practice in Bozeman, Mont., died in that city last month at the age of 66. He located in Bozeman in 1881.

Yankton, S. D., is to have a new hospital, a company with \$50,000 capital having been organized for this purpose, under the auspices of Bishop O'Gorman.

The Mower County Society added a picnic to its July meeting, the wives of the doctors serving the repast. A couple of papers finished the program and gave color to it.

Dr. Frederick C. Poehler, of Herried, S. D., died last month at St. Barnabas Hospital, at Minneapolis, of typhoid fever, at the age of 26. Dr. Poehler was a graduate of Hamline.

A joint mid-summer meeting of Aberdeen District Medical Society of South Dakota, and the West Central and Camp Release Societies, of Minnesota, was held at Ortonville last month.

Dr. H. W. Froehlich, a recent Hamline graduate, who has been connected with Asbury Hospital for three or four years past, has located at Pine City, having purchased the practice of Dr. A. Lyon, of that place.

The McLeod County Society met at Hutchinson for its mid-summer meeting, and invited the dentists. Dr. Allen, of Glencoe, read the only paper given. His subject was "The Relation of the Dentists and Medics."

The project for a public hospital for Aberdeen, S. D., having fallen through, private parties have taken the matter up and are preparing to erect a building to cost not less than \$15,000. Dr. R. L. Murdy is a leader in the enterprise.

Dr. C. P. Robbins, of Winona, was married last month to Miss Frances L. Sinclair, also of Winona. Dr. and Mrs. Robbins have gone to Europe, where they will spend several months, the doctor studying in Vienna and other medical centers.

Work has been begun upon the first building to be erected in the State Sanatorium at Walker, Minn. It will be merely a wing of the large building. In addition to this several sleeping shacks will be put up at once. The total cost will be about \$60,000.

The Stearns-Benton Society met last month at St. Cloud. Dr. Knights, of Minneapolis, the councilor of the district, spoke upon the work of the State Association. Dr. Woods, of Clear Lake, read a paper and several applications for membership were received.

The Lyon-Lincoln Society held a joint meeting last month with the Eastern Society of South Dakota, meeting at Tyler. Several papers were read, and one or two at least were out of the usual rut. Dr. Workman, the district councilor, spoke on "How to Assist Your Councilor."

The Park Region Society met at Osakis last month and listened to two papers on summer topics. The meeting, the banquet, and the outing were accompanied by rain, and a local paper says the physicians went home wet, inside and out.

The Houston-Fillmore Society met in Caledonia last month, and in addition to papers it enjoyed a banquet served in the afternoon, and in the evening the public was invited to meet the doctors at a general reception. Speeches were made by the mayor, the ministers of the town and by two or three physicians.

The Grand Forks District Society of North Dakota held its annual meeting at Grand Forks, N. D., last month. The following officers were elected: President, Dr. F. J. King, St. Thomas; vice-president, Dr. J. Grassick, Grand Forks; secretary, Dr. H. H. Healey, Grand Forks; treasurer, Dr. A. L. McDonald, Grand Forks.

At the thirty-eighth annual meeting of the Wabasha County Society, several papers were read, resolutions in memory of the late Dr. J. P. Waste were passed, and the following were elected officers: President, Dr. J. A. Slocumb, Plainview; vice-president, Dr. C. J. McGuire, Minneiska; secretary and treasurer, Dr. W. J. Wilson, Lake City; delegate, Dr. E. H. Bailey, Lake City; alternate, Dr. W. T. Adams, Elgin.

The Rochester Sanitarium Company has purchased the handsome Knowlton residence in that city for use as a sanitarium. Its purpose is to take care of patients preparing for operation and after operation at St. Mary's Hospital. The need of such an institution has long been felt, and proper managers, lay and professional, for sanitariums are not readily found. Dr. John E. Crewe, now of Rochester, but formerly of Zumbrota, will be the attending physician.

The following physicians received certificates at the July meeting of the North Dakota Examining Board: L. Alnklow, Cooperstown; C. Lockhead, Wales; H. Canfield, Hatton; H. R. Simon, Lakota; W. H. Godfrey, Russell; A. B. McCannell, Westhope; H. S. Mouhman, Bottineau; H. L. Halvorson, Des Lacs; R. B. Campbell, Bismarck; J. M. Law, Loma; W. R. Shortridge, Flasher; B. C. Boetler, Washburn; W. C. Wolverton, Linton; C. V. Winsett, Mohall; C. R. Titus, Minot; P. F. Rice, Cannonball; S. C. Soper, Leonard.

The program of the Hennepin County Medical Society is now being prepared for the entire year, in accordance with the instructions of the Executive Committee. Suggestions will be gladly received, and are solicited by the program committee from the members, and the committee requests those who wish to offer papers during the coming year to notify the president, Dr. Frank C. Todd, 602 Nicollet, giving the subject. The September meeting has been postponed from September 3 to September 17 on account of the G. A. R. meeting.

A regular meeting of the Southwestern Medical Society was held at Luverne on July 12th, Dr. C. O. Wright, president, in the chair, and about 38 members and visitors present, including Dr. H. A. Tomlinson and Dr. Thos. McDavitt, president and secretary, respectively, of the State Medical Association. The following named physicians were elected to membership, having been reported favorably by the censors: J. H. Bong, Jasper, by initiation, Hamline, '97; Dr. G. G. Balcom, Lake Wilson, by initiation, U. of Minn., '96; Dr. F. A. Carrel, Rushmore, by initiation, U. of Minn., '90; Dr. C. P. Dolan, Worthington, by initiation, Bellevue, '81; Dr. N. J. Nessa, Brewster, by initiation, U. of Minn., '05; Dr. C. L. Sherman, Luverne, by initiation, Barnes, '00; Dr. R. G. Stevens, Heron Lake, by initiation, P. and S., Chicago, '05; Dr. A. B. Williams, Wilmont, by initiation, Hahnemann, Phil., '02; Dr. L. A. Williams, Slayton, by initiation, U. of Minn., '97. The resolutions adopted by the House of Delegates of the State Association relative to life insurance company fees for examinations at the

recent State Association meeting, were adopted unanimously as follows: Minimum fee of \$5.00 for each and every ordinary examination, including chemical examination of the urine; minimum fee of \$10.00 for each and every examination where a microscopical examination of urine, sputum, or other secretion is required; minimum fee of \$3.00 for each certificate of health for renewal of lapsed policies. Also the following: Resolved, That we do not believe any examination for life insurance is complete without the examination of the urine of the applicant, and we are unwilling to make any recommendation on an incomplete examination; Resolved, That these resolutions shall go into effect and be morally binding upon our members 30 days after their adoption; Resolved, That these resolutions be published in the Journal-Lancet as a notice to all insurance companies. Papers were read as follows, discussion being general: "Precautions in Treating Cases of Obstetrics," C. O. Wright; "Obstetric Practice In the County," W. D. Beadie; "Post-partum Hemorrhage," L. A. Dickman; "The First Ovariectomy Performed In Rock County," by invitation, A. McNab; "Orchitis As a Complication of Mumps," Thos. Lowe; "The Physician and His Drugs," Geo. D. Rice; "Acetozone In Typhoid Fever," Ray Humiston.—Emil King, M. D., Secretary.

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Truly, we shall continue to go abroad and see things far inferior to what we have at home; but the man who says he has traveled, and has not seen the Mississippi river or the Rocky mountains,— well, he has been a traveler with his eyes shut, for he has passed by the best of it all and not seen it.

THE STATE FAIR

The Minnesota State Fair is a great big thing, and it is so big that it is making the state famous, while helping to develop its resources, and to make it be the best state in the Union for a physician to begin practice in, and to stay and live in.

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vertisement in this journal (p. 6) you will see that you can buy this combination in a definite formula. As the water of crystallization is driven off in this preparation, it makes it several times stronger than the ordinary soda phosphate, and for this reason it does not effervesce as violently as other preparations, but it effervesces sufficiently to carbonate the water.

ACUTE ILEOCOLITIS

The onset of this case was sudden with some vomiting, but much pain and fever and thin green stools partly fecal and containing undigested food. In a few hours the discharges were composed entirely of blood and mucus, preceded by pain and tenesmus. The stools were about thirty minutes apart, each one containing less than a tablespoonful. Prolapsus ani was present and there was exquisite tenderness all along the colon; temperature 104°; the prostration was very marked.

TREATMENT

As the pathological process seemed to be principally in the lower half of the colon, it was decided to treat the case altogether by injections. Glyco-Thymoline, one ounce to the pint was the only drug used and was administered in the following manner: The solutions were made hot and at least a gallon administered at one time. It was injected high into the colon through a long rectal tube and early in the disease repeated twice daily. Before using the Glyco-Thymoline the colon was always cleansed with about two gallons of hot sterile water. After each irrigation four ounces of a somewhat stronger solution of Glyco-Thymoline was introduced higher into the bowel and its escape prevented by compression of the buttocks. In a few days blood disappeared from the stools which at the time became less frequent and pain and tenesmus ceased. Mucus persisted in the stools for not quite two weeks.—
A. F. CONREY, M.D., Baltimore, Md.

X-RAY BURNS

At the 337th regular meeting of the New York Dermatological Society held Nov. 28, 1905, the subject of x-ray burns was taken up, and Dr. Henry G. Piffard, Emeritus Professor of Dermatology in New York University said, according to the Journal of Cutaneous Diseases, "that he had obtained the most benefit in treating these conditions from Antiphlogistine, chloride of zinc, high frequency current, and ultra-violet rays."

ASSOCIATION AND THE NORTHWESTERN LANCET

PRICKLY HEAT

Many specifics have been advocated for a sure cure; very few, however, have been found satisfactory. An exception may be claimed in favor of Tyree's Antiseptic Powder, says Dr. M. E. Chartier, Faculté de Paris, France, as it possesses curative as well as preventive properties. Besides, it is quite inexpensive, five or six tablespoonfuls of the powder in a gallon of water being quite sufficient for an ordinary sponge bath, which will act as a preventive. A larger percentage may be necessary to cure the most troublesome cases. There are to be found in the drug stores many preparations containing boric acid and talcum compounds. These preparations, generally used in a dried state, have the great inconvenience of clogging the pores of the skin. This is not the case with Tyree's Antiseptic Powder, as it acts as a deodorizing, stimulating agent. Sample and particulars from J. S. Tyree, Chemist, Washington, D. C.

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These views are in harmony with the published observations of Dr. Crile, of Cleveland, Ohio, who found that in a decapitated animal the heart's action was better sustained by the continuous ad-

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PNEUMONIA: ITS PRESENT DAY STATUS AND TREATMENT*

BY S. H. BOYER, M. D.

DULUTH

The more one sees and thinks of pneumonia and the less one reads about it the more one thinks he has evolved something new and original in the treatment of this disease. But the more one reads about it the more one is inclined to the idea that long ago others have made the same discoveries and have had the same thoughts. One finds, too, that the others have had more thoughts and greater ones. The voluminous literature on pneumonia teems with many and somewhat conflicting views as to its proper treatment. The views set forth are more or less valuable in direct proportion to the correctness of the knowledge of the disease and of the action of the agencies used in its treatment possessed by the one giving expression to such views. After carefully reviewing a good deal of the literature, old and new, I am forced to believe that with the exception of a few more or less theoretical ideas nothing really new has been advanced.

Cumulative practical experience seems to indicate that a supporting, eliminative, and symptomatic line of treatment yields the best results. Morphine, hypodermically in the early stage of the disease, is strongly indicated, for it relieves pain, steadies the heart, and lessens the shock to the nervous system, which is very great in the severe cases. Thus the patient is put in a favorable condition to meet the later onslaughts of the disease. Cathartics are used at the beginning, and many use the alkaline diuretics, such as citrate of potash, along with spir. etheris ni-

troisi and liq. ammoniæ acetatis as eliminants. Strychnine seems to be the heart tonic of choice because it sustains the tone of both the heart muscle and its nervous supply. It does this without stimulating the heart to greater effort than it is already forced to make. During the earlier stages of pneumonia the heart is already working overtime and this certainly would contra-indicate the use of digitalis and alcohol. To use these or similar drugs would be to add to the heart exhaustion that inevitably follows in the course of pneumonia. The indication is to conserve cardiac energy. Fever is now pretty generally let alone unless very high, i. e., considerably over 104 degrees F. and accompanied by nervous symptoms. It is then treated by cold to the chest and sponging. The cough, if distressing, is treated by codein or heroin. For pulmonary edema atropine and hypodermics of adrenalin are of use. High rectal injections of saline solution are also used with much frequency.

The above is a brief statement of what Dr. Henry P. Loomis found to be the most successful treatment in four of New York City's largest hospitals, namely, the Presbyterian, Roosevelt, New York, and Bellevue. It is the method of treatment most generally used.

Let us now consider some of the new ideas concerning pneumonia, and see wherein its treatment, based upon these ideas, differs from the treatment chosen because of practical experience.

It is generally accepted I believe that the pneumotoxin is the cause of the symptoms seen in pneumonia, but Dr. E. Le Fevre, of New York,

*Read before the Minnesota State Medical Association, June 20 and 21, 1906.

has pointed out that "the primary and essential action of the toxemia of the pneumococcus infection is that of stimulation," and he believes that "the stimulation of the early period of the disease is accountable for the later failure—that it is a true exhaustion that follows the excessive work that the respiratory and circulatory system has had to do." In discussing treatment he uses eliminants,—water, saline solution, alkaline diuretics, spirit of mindererus, and free catharsis, which is different in no way, you see, from the treatment based upon practical experience, so far as elimination is concerned. He uses morphine or opium in the early stages, too, but he uses it to counteract the over-stimulation due to the pneumotoxemia. He uses aconite for the same purpose, believing that to counteract or antidote the stimulating influence of the pneumotoxin is to conserve the heart's strength, the respiratory power, and the vital forces in general. Of course he does not continue the use of the cardiac depressant beyond the time of the toxic stimulation. The idea is that pneumonia poisoning should be treated along the same lines as poisoning of any other kind in which the poison has to be eliminated, but symptoms held in abeyance until elimination is effected.

This seems to be the proper place in this article to consider the quinine treatment as advocated by Dr. Galbraith, of Cananea, Mexico. He is almost, if not quite, satisfied in his own mind that quinine is specific in pneumonia. He uses it in terrific doses, giving from forty to seventy grains as an initial dose in accordance with the degree of fever present, and repeating, in half the initial dose, an hour later. He reports a fall of temperature and pulse-rate with recovery by lysis. It is definitely known "that the evidence is conclusive that both in man and in the lower animals quinine in sufficient amount is a powerful depressant to the heart muscle or ganglia."⁶ Bearing this fact in mind and linking it with Le Fevre's idea we can understand how the huge dose of quinine may conserve the heart's energy by antidoting the over-stimulation due to the pneumotoxin, especially as quinine does not secondarily depress the heart. Dr. Galbraith also uses tincture of iron in ten to fifteen drop doses every two to six hours. What role this may play in his treatment will be considered later.

Here, then, we have different observers using the same or different drugs with equally good results. Each gives different reasons for the use of the remedies, but the drugs used have the same ultimate effect, that of conserving heart energy. A series of experiments to establish the physiological action of the pneumotoxin would be of interest and might possibly throw some light

upon the treatment of the disease. In the laboratory the action of the toxin could be studied apart from such a bothersome complication as pulmonary consolidation. Of course such a series of experiments would be fraught with many difficulties, but, nevertheless, I believe investigation along this line should be made.

For many years the medical profession has been groping vainly for a specific remedy for pneumonia. With the discovery of the germinal cause hope ran high that antiseptic treatment would conquer the disease by destroying the pneumococcus, and while antiseptic inhalations and antiseptics internally have been used, sometimes with probable benefit, still the antiseptic treatment has been disappointing, to say the least.

When Behring gave us the diphtheria antitoxin and its great worth became apparent all hands tried to emulate him by producing a pneumonia antitoxin. Sera were produced fast enough, and are being produced to-day, but they are neither specific nor useful. The field of investigation opened up by Behring soon led to the conclusion that a diseased body throws off its disease by producing its own antitoxin. As no specific has been found, as no antiseptic effectively reaches the lanceolatus bacillus and as no serum with antitoxic properties has been produced, investigators have turned their attention to learning the conditions under which the human economy manufactures its own antitoxins. This idea is being worked out now.

Last winter J. Madison Taylor, of Philadelphia, wrote a paper⁷ treating of this subject. Among the authorities he cites is Sajous of Philadelphia from whose writings he quotes: "The primary effect of deficiency of alkaline salts in the blood being to inhibit nutrition, to impair the efficiency of, and finally arrest, the protective functions of the organism, it constitutes one of the most active causes of death;"⁸ and, also from Sajous, "steadily as the febrile process advances the salts are consumed, and, being inadequately renewed, the vital and defensive functions are increasingly hampered until life ceases." This constitutes the keynote of Dr. Taylor's paper. On the strength of this, saline solution is recommended, not because it washes the blood, for it is shown it does not, that after its use the urine is hypotonic, but because it supplies the necessary sodium chloride, maintains the normal alkalinity of the blood, and thereby favors nature's efforts to produce her own antitoxin. The use of the salt solution is not postponed until a desperate condition obtains, but it is used from the beginning. Of course the saline is not used as a specific, and to the exclusion of other remedies, but the reason for its use is quite at variance with the one ordinarily

given, Dr. Homer Wakefield,¹ of New York, in discussing this subject, says, that in the absence of oxygen if chlorine be present it is taken up by the oxygen affinities, and he suggests this as the cause for, and the way of, the disappearance of the chlorides from the blood in pneumonia, which is a suboxidation disease.

Dr. Wakefield's idea of how the chlorides disappear from the blood has aroused in my mind the question: Would anything which increases the oxygen and the oxygen-carrying power of the blood lessen the absorption of chlorine and thereby aid in preserving the alkalinity of the blood? I believe it would. I alluded above to Galbraith's free use of iron in conjunction with quinine. If the iron acts rapidly enough, certainly the power of the blood to supply oxygen to the tissues is increased. Now, add to the iron treatment pure, cool air, and it is readily understood how the increased amount of oxygen entering the diseased body tends to lessen the absorption of chlorine and so maintain the alkalinity of the blood. Possibly iron and salt have the same effect on the blood's alkalinity with this difference; the one maintains it by natural processes and the other supplies it.

Sajous' idea that the salts of the body in normal amount are an absolute necessity to the production of autoprotective bodies gives a new reason for the use of alkaline diuretics, the vegetable salts of potash. Heretofore they have been used as eliminants, whereas their real worth may have been in replenishing the loss from the body. Here again, then, we find different reasons given for the use of the same drugs in the same disease, both reasons in this instance probably being right.

There is one more point to which I wish to draw your attention. In a variety of diseases leucocytosis occurs and is believed to be intimately concerned in the processes by which the system overcomes disease. This is probably true in pneumonia and is evidenced by the practical fact that the more marked the leucocytosis the greater the ground for giving a favorable prognosis. The leucocytosis diminishes after the crisis and as convalescence is established. In this connection I will say that an increase in the amount or the reappearance of the chlorides in the urine is also looked upon as a favorable indication. To study the leucocytosis in relation to the urinary chlorides would be interesting from a prognostic standpoint. In view of the favorable import of leucocytosis in pneumonia the idea has come into my head that if we were able to bring it about at will we might thereby aid the economy to destroy the offending toxins and germs in its own natural manner. There are a number of

therapeutic agencies that will cause leucocytosis.⁷ Saline solution will, and its use in pneumonia may therefore serve the dual purpose of establishing leucocytosis and maintaining the normal alkalinity of the tissues; however, in this case the increased leucocyte count may be a secondary effect resulting from the increased disease-resisting power due to the improved condition of alkalinity. Among the long list of drugs that have been heralded as specifics is salicylate of sodium.⁸ The use of this drug has evoked as favorable a report as any other, with the possible exception of chloroform; and its use is known to increase the leucocyte count. Who shall say that when it has done good, that it is not by this action on the blood which, in its turn, takes on renewed vigor in the battle?

It is interesting to note that alcohol is pretty generally abandoned in the treatment of pneumonia, especially in the earlier stages, as being worse than useless; and right here let me say that alcohol is one of the drugs that *diminishes* leucocytosis.

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DISCUSSION

DR. J. B. MCGAUGHEY (Winona): I am always interested in the discussion of pneumonia. I can compliment the doctor very much upon his paper. He has furnished us little that is new, because there is nothing substantially new in the treatment of pneumonia. The treatment with quinine, is going back to a measure that was adopted somewhat generally during the war, but the quinine treatment at that time was not pushed to the extent that Dr. Galbraith has pushed it. We hope for better results in the future than we have had in the past; unfortunately, our mortality remains very nearly the same that it was forty years ago. I have been very much interested in the reports of the method of Dr. Charles Mayo by puncturing the lung with a trocar. I would like to hear more concerning that line of treatment, if Dr. Mayo has continued it.

DR. GEO. DOUGLAS HEAD (Minneapolis): I wish to congratulate the writer of the paper upon the conservative stand which he has taken in regard to the treatment of pneumonia. It has seemed to me that with pneumonia, as with many other diseases, we are almost absolutely ignorant of the natural history which the disease pursues. Someone would certainly learn something worth while, provided he would study the natural history of three or four hundred cases, or possibly a thousand cases, of lobar pneumonia without giving any medicine whatever or any treatment, allowing the disease to pursue its course uninfluenced by drugs. Very likely many of the extravagant statements made regarding the specific treatment of the disease are due to the fact that the disease in different localities, under different conditions, affecting different individuals in different walks of life and with different habits, has a

different mortality. Take the drunkard, for instance. If he is an individual past middle life, the mortality is exceedingly high. In young individuals under twenty years of age the mortality is exceedingly low. These points have been well established. There are lost in private practice less than ten per cent, and perhaps only five per cent, of cases of lobar pneumonia in young adults. Then again: in different localities the disease pursues a different life history which must be taken into consideration. The mortality is different in hospital and private practice. The nursing which the patient receives is better, the hygienic surroundings are better. All these things have their influence in determining the mortality. We have no specific, and the probability is that the nearer we leave nature alone the better our cases will get along, and it is possible that meddling interference does some of our cases positive injury.

DR. CHAS. H. MAYO (Rochester): The method that Dr. McGaughey spoke of is one that was discussed here two years ago regarding the treatment of the worst possible cases of pneumonia, not the ordinary cases, but the young adult or middle life, from twenty to forty years of age, the strong man, the man who should resist; yet the danger often comes to those who are strong and vigorous. That type of patient does make a hard fight, and you can ordinarily tell twenty-four hours before he is going to die that his case will be fatal. It is the patient of that type and that condition only in which we think of resorting to some surgical type of drainage. We have an effusion which compresses the veins and obstructs the arteries, made up of material which is not raised and which must be liquefied and re-absorbed through the lymphatic system. In such a case we put a trocar in the lungs and get eight or ten points of drainage right in the solid lung, to relieve the tension which produces death and to allow the circulation to become re-established instead of allowing a retention for a number of days to have liquefaction take place. Some patients after a severe illness of this kind develop gangrene and abscess of the lung. If we could limit the work to these cases there is only a small percentage of cases that the work could be carried out in. Dr. Ferguson of Chicago has had two cases in which he has used this method, and it proved successful. There is something to be worked upon, something to be thought of, and we know that we cannot wait where we see that a patient is going to die in twelve or twenty-four hours.

The question of leukocytosis is about the only advance in medicine and surgery. For the last five years leukocytosis has dropped out as not being useful to the surgeon. It was thrown out as being unnecessary and a waste of time, but last winter it came back again. Leukocytes we can look upon as representing a re-action against irritation. It is the type of cell in the leukocytosis, the polynuclear cell, which counts, and it means that the proportion of these cells to the total indicates the degree of resistance to the infection. If these polynuclear cells increase too rapidly, or more rapidly in proportion to the increase of leukocytes, then we have a low degree of resistance. If the number of polynuclear cells is rather low in proportion to the leukocytes that patient should recover.

DR. J. L. ROTHROCK (St. Paul): I wish to call attention to the serum treatment of pneumonia. A few years ago, after it was first proposed and tried by the Klemperer brothers, serums were placed on the market, but the results obtained did not meet expectation. There were two reasons for this:

The serum treatment was reserved until other methods of treatment had been tried, and was used in many instances only as a last resort when the patient was

practically moribund and was expected to resurrect the patient. Now every one who had any experience with serum therapy knows that even in diphtheria it is necessary to use the serum early to get the best results and that after the patient is overwhelmed, brilliant results from the serum treatment are not to be expected. Another reason for the unfavorable early reports of the pneumococcal serum was the difficulty of producing a serum of uniform standard. As is well known, the pneumococcus of Frankel differs greatly in virulence, and from this fact the difficulty of immunizing animals for the production of serum was greatly increased. A few biological laboratories have continued their work in this direction, and within the last year or two have been able to furnish a serum which seems to meet every requirement.

Personally, I see but few cases of pneumonia, but within the last two years have tried the serum in three cases with such uniformly good results that it seems desirable to call the attention of this Association to them. I will briefly report only one case, which will serve as a type. The patient a girl aged twenty-six, was taken late Saturday with a chill; tem. 103°, pulse 120, and by Monday morning she had well marked physical signs of pneumonia with consolidation of the lower lobe of the left lung. Temp. at this time 104.5°; pulse, 120. The patient was given 20 c.c. of Mulford's antipneumococcal serum, and by evening she showed marked improvement, especially noticeable in the character of the pulse, which was now 108 and much improved in strength, and the temperature was 102°. According to recommendation of the maker, the serum was repeated in the evening and again the following morning, with the result that at the end of that time the temperature was 99.2°, the pulse 90, and the patient was convalescent. The lung cleared up gradually, just as after resolution, and about ten days were required during which there were slight elevations of temperature, but the condition of the patient was entirely satisfactory.

The marked influence of the serum treatment on the other two cases was identical, so that for lack of time I shall not report them in detail except to say that one was a patient of 60 years the pneumonia complicating operation for removal of the gall-bladder. Now, I am not claiming that all three of these patients would have succumbed had it not been for the serum treatment, but the pronounced and almost specific effect of the first injection of serum produced such an amelioration of the symptoms as to convince the most skeptical. In fact, no other treatment was employed. Nor could these be considered abortive cases of pneumonia, for the process in the lung ran a usual course, but without symptoms.

The reports in literature during the last year as regards the serum treatment for pneumonia are much more favorable than formerly, and I believe that it is very desirable that the serum treatment have a further trial, and I am convinced that it will find a place as a recognized method of treatment in the near future.

I wish here to emphasize one very important point in connection with the serum treatment, and that is that it is necessary to use it early, in fact as soon as the diagnosis is made. In the later stages of the disease when the patient is overwhelmed little is to be expected from the serum treatment.

DR. S. MARX WHITE (Minneapolis): This subject of the pathology and treatment of pneumonia is such a broad one that we would like to talk about it all day, I think. There are, however, two points in the paper and in the discussion that interest me especially. The first one to which I would like to speak is in regard to the suggestion that a surgical mode of procedure shall be adopted in certain cases. I have had the good for-

tune to see the lung in cases of pneumonia in autopsy a comparatively large number of times. If we will stop a moment to consider the stage Dr. Mayo spoke of, with the lung densely packed with exudate, where it is possibly interfering with the pulmonary circulation to the extent that it offers a mechanical obstacle, we shall find, in practically all instances that the pneumonic area is not moist, but is dry. The alveoli are densely packed, and microscopically we find them filled with an exudate composed of fibrin and red blood cells, with leucocytes in varying proportions. The exudate must be dissolved and the leucocytes are beginning to accomplish this, but at the stage when we should remove the obstacle, it is certain that the trocar will not produce the results desired, because the exudate is solid, not fluid, and is confined in the small alveoli, not in a large cavity. Another point is that, except with the utmost care, secondary infection must occur. We go through the pleural cavities to introduce the canula, and without unusual care infection must take place.

The other point is in regard to the leucocytes. I think we are all agreed that the leucocyte count is one of the important prognostic signs in pneumonia. A low leucocyte count in a severe case tells us that death will probably occur. Now, the suggestion was made that we use a certain remedy to increase the leucocytes. We are just at the beginning in our knowledge of the importance of leucocytes and of the substances in the blood serum, and if we increase the leucocyte count we must attend to the other factors with which leucocytosis is associated. I refer especially to the substance named by Wright and Douglas, and recently mentioned in the literature on the subject by Hektoen, the so-called *OPSONIN*. The purpose of the opsonins is to act with the leucocytes by lowering the resistance of the microorganisms so that they are no longer capable of resisting phagocytosis, but are taken up by the leucocytes. If we increase the number of leucocytes without increasing the opsonin substance we fail in our purpose, and therefore our suggestion in this respect is that we study the increase of the opsonins in the blood and do not attempt to increase the number of leucocytes without knowing whether or not opsonins are present, and that we seek means to increase opsonins, as well as leucocytes.

DR. W. E. BROWNING (Caledonia): The last speaker has introduced in the treatment a point about which I am anxious to hear. Many writers suggest the use of salicylates, and some of them report remarkably good results from their use. We all look upon this disease as being a self-limited one, and yet we look forward to the possibility of getting ahead of it, at least a little. I have treated only three cases with salicylates, and have been much pleased with the results. Now, instead of trying to increase the number of leucocytes, as suggested, can we not use something that will act upon the germs themselves, to prevent their proliferation and thus avoid the production of the toxins as the salicylates are supposed to do? If we do, we shall be accomplishing the results looked for by the last speaker, but in a more direct way. I would like to hear from some one else who has had more experience with the salicylates in the disease.

DR. J. W. ANDREWS (Mankato): I do not rise to give any new treatment, for probably I would mention nothing that has not been mentioned, but I rise to make only this point, namely, to have a better understanding of what we should do. I will briefly relate a case which was recently under my care, the case of a lady thirty years old, generally in very good health, with one of the worst double lobar pneumonias, I think I have ever seen; both lungs consolidated, with respiration from 48 to 50 per minute, and other symptoms equally grave. The

consulting physician and myself felt the case would be fatal, but she made a good recovery. I mention this as preliminary to what I am going to say. It has been my observation and experience that light cases of pneumonia, especially in the adult, are more likely to prove fatal than severe cases. You will remember that Dr. Parks died in Chicago of pneumonia. I happened to be in Chicago at the time. There was only a very small patch of consolidation, and yet the case proved fatal. I have had a number of cases where I was surprised at the mortality where there was so little lung involved. Our chairman has made a study along this line, and can give the pathology and the reason why we lose patients where there is so little lung involvement and why those apparently hopeless cases recover.

DR. J. W. BELL (Minneapolis): In the treatment of pneumonia we should bear in mind that we are treating an individual suffering from pneumonia, and consequently consider both the individual and the disease. The management of pneumonia affecting John Smith, a robust, vigorous young man is a very different proposition from pneumonia affecting John Brown, the frail, aged man, or the alcoholic. The treatment of pneumonia, with our present light, must of necessity be largely symptomatic, consequently we should avoid routine treatment and especially avoid the mistake of relying on any one drug.

DR. L. F. SCHMAUSS (Mankato): I wish to congratulate Dr. Boyer upon his paper on general lines, but more especially on the stand he has taken in regard to alcohol in the treatment of pneumonia. I think alcohol indiscriminately employed, as it has been in the past, is useless and will do considerable harm. It is an easy matter to agree with an accepted line of procedure, but it is a very uncomfortable thing to take a stand on the opposite ground. It is my firm belief that we shall not see any general improvement in the mortality of pneumonia until we change our conception of the disease and change our method of treatment.

Pneumonia, as a whole, is looked upon as a mechanical process. It is looked upon in the same way that we look upon the mechanical obstruction of the heart. It may be true to a slight extent, but I believe the idea is wrong. I believe pneumonia is an intoxication, the same as peritonitis, the same as any other septic condition, but with a primary involvement of the lung. We have to deal with a general intoxication, a septic condition, and we shall, and I do, get better results by keeping this in mind.

Primarily, pneumonia is a *congestion* of the lung. What do we do to reduce the congestion? Give stimulants, alcohol or opium? It is practically never necessary to use opium in pneumonia. It has only a deleterious effect on the digestive and eliminative process and ought not be used. In the majority of cases we can use drugs like phenacetin and antipyrin at the beginning, and they will do no harm at that stage. Besides, the relief of pain, anxiety and restiveness, we get the benefit of equalizing the circulation and producing sweating, which favors elimination of deleterious products. The latter effects can be augmented by the administration of aconite and pilocarpin. But there are other means we can employ in controlling the congestion, yet it is a thing that is very much overlooked. I cannot understand why it is that so many put their faith in local applications, such as hot packs, cotton jackets, anti-phlogistine, and the like. I believe that principle is wrong. I believe these applications for various reasons do more harm than good and that the patients recover in spite of them and not because of them. They rather augment the congestion than relieve it. What then should we use? I am firmly convinced of the rationality and efficiency of cold water in its various applications (bath, coil, moist cloth, etc.). By this means we not

only favorably influence the congestion, but also relief existing pain, reduce high temperature, and by improving the circulation relieve the heart. The application of cold to the cardiac region is one of our best heart stimulants. If, in addition to these and the approved general measures, we keep the bowels, kidneys, and skin active, and prevent auto-intoxication (re-infection—self-poisoning) from the intestinal tract (a sadly neglected part of the old treatment of pneumonia) by some reliable intestinal antiseptic, the great majority of our cases will run a favorable course devoid of grave symptoms and complications. Cases thus treated require little or no stimulation. Strychnin or digitalis will answer this purpose. In alcoholics I get excellent results from *tr. capsicum*. Occasionally only a little codein or heroin is necessary to allay a persistent and aggravating cough. I do not, as a rule, use any so-called expectorants in the treatment of pneumonia. My results have been very satisfactory.

DR. W. H. MAGIE (Duluth): I would like to say a few words about the surgical side of pneumonia. Some years ago in St. Mary's Hospital, in Duluth, we introduced the salicylate of soda treatment for pneumonia. The results were really gratifying as far as the reports went. I probably treated in succession 250 to 300 cases of pneumonia in all its varieties. The most prominent thing I noticed while we were using the salicylate of soda treatment was the infrequency of empyema. Heretofore it has been one of the most common complications, but with the salicylate treatment we did not have more than one-half the cases of empyema as was formerly the case. I have not given much attention to the treatment of pneumonia for some years past, but some of our people are still employing the salicylate of soda treatment, not depending entirely upon it, but with normal salt solution and other stimulative treatment later on.

One thing in particular I want to speak of: the condition of empyema is very disastrous complicated with pneumonia. In my early practice in the treatment of empyema, after we stopped aspirating, as we did twenty years ago, I used to open every chest as soon as I found it had pus in it. I think that is a bad mistake. I think the chest should not be opened until it has had time to wall off. Really, the same tactics should be employed in the treatment of pus in the chest as in the peritoneum to-day. In my opinion it is best to retain the patient in a semi-recumbent position until the pus comes into the lower part of the chest and becomes circumscribed or walled off, and then, later, resect the rib and drain. The mortality of the operation on the chest in empyema before the pus is walled off, is very high, while, if we wait a few days until it becomes circumscribed and walled off, the mortality is very low.

DR. V. J. HAWKINS (St. Paul): I wish to congratulate the writer of this paper on coming around to more original plans of management of pneumonia cases. We have had his subject up for years in medical societies, and each year it is as interesting as the first. Those persons who have listened to these papers from year to year are very much impressed to-day with the change that has come into the treatment. As a matter of fact, that is the sole reason for bringing up discussion. It is such a short time since the use of digitalis, ammoniacchlorid, or the different coal-tar products was advised in pneumonia that it is really refreshing to hear a paper along the lines of this one. Now we know that in the lung we have practically a double circulation of the blood, and we know that in surgery we fear tension almost as much as we fear infection. We can, at the present time, perhaps, operate more intelligently, although we may without knowing it introduce infection

into the lung, and there is only one way in which we can eliminate it. If we can relieve the tension we are going to aid the patient, and the only time we can relieve the tension is when the patient is first taken sick. Then we can do it with salicylate of soda; we can do it then with Galbraith's method of using quinine; we can do it with veratrum, with aconite, and other things. It was done years ago, before most of us began the study of medicine, and successfully. If you start the treatment vigorously at first, and then support the patient, you will save nearly every case of pneumonia,—it does not make any difference in what extremes of life. In olden times they bled and saved their patients, and at the present time we can save our patients in the way I have mentioned. Only a few years ago they used to bleed to relieve the tension, and then supported the patient as best they could.

I want to offer a vigorous protest against the surgical method suggested in pneumonia. You will not do any particular good in that way, no more than when you try to drain the peritoneal cavity where you have a peritonitis—when you open an inflamed peritoneum. You surgeons know you cannot drain it. You drain one little bit of a point, but the rest is shut off. In pneumonia you have the same thing; you puncture the lung, and it does not make any difference how much or how many times you puncture you do not get complete drainage, and you may carry in infection which will add to the tension and do a great deal more harm.

Those cases treated by ordinary methods get well. I have just had a case which I thought I was going to lose, that got well. Some have spoken of the condition of the patient as making a difference. How many of you have seen some old, good-for-nothing fellow that you did not care about saving, sick with pneumonia, drunk, in delirium tremens, and you gave him a big dose of medicine and he got well, but some desirable patient you wished to save and over whom you exercised the utmost skill and care, died. If you had given him the same big dose of medicine and let him alone he would have pulled through.

DR. H. A. TOMLINSON (St. Peter): Nothing has so far been said about the pathology of pneumonia with relation to the treatment of the disease. In discussing the treatment of pneumonia we are apt to lose sight of the fact that the infection, as well as the intoxication, is general, and that we are therefore dealing with a systemic disease with a particular local manifestation. In the treatment of this disease, we are not concerned so much with the involvement of the lung tissue as we are with the extent to which the alimentary canal, heart, and kidneys are handicapped by previous involvement in chronic disease, and the extent to which their functions are interfered with by the general intoxication.

From my personal experience I do not believe that an uncomplicated pneumonia, occurring in an otherwise sound individual, ever kills. Nor is the area of lung involved an index to the severity of the disease, or the way it will terminate. It is not so very common to see the most profound systemic involvement in those cases in which the lung area involved is small, and I have seen a double pneumonia in a woman past 65 years with hardly any systemic involvement and very little respiratory discomfort. We are prone to forget that dyspnea results from involvement of the heart. As the result of the intoxication the nervous system is more or less involved, thus interfering with all the vegetative processes and making the lowered alimentary capacity a serious factor, while the involvement of the lung adds to the strain upon the functional capacity of the skin and kidneys. Even when apparently robust young people, who are ill with pneumonia die, there is always marked involve-

ment of the nervous system, as shown by the adynamia and delirium. For these reasons it seems to me most important to consider the relational pathology of the disease to the individual, in formulating and planning the method of treatment in pneumonia and in the selection of therapeutic agents as well. If we can eliminate the toxemia and maintain the functional capacity of the heart and alimentary canal, the pneumonia will take care of itself.

With regard to leucocytosis, I have believed for some time that the increase in the number of leucocytes is not of itself important, nor does this increase have any special significance. Practically, leucocytosis represents the response of the organism to the presence of a foreign substance that is acting as an irritant, and the more extreme and persistent the irritation the greater the leucocytosis.

The morphology of the cells is significant only as an indication of the extent to which the vitality of the

general organism is involved. That is, when there is the normal or an excessive number of polymorphonuclear cells present, it means that the organism is able to react vigorously and to manufacture normal cells as needed; but when there is a relative increase in the more primitive form of cells, it has been, in our experience, the evidence of lowered vitality and therefore an indication of danger. I also believe that the presence of leucocytosis is determined, not only by the nature of the irritant, but by its location. That is, the more richly supplied with sensitive nerves is the area involved, the greater will be the leucocytosis. The reason there is no leucocytosis in some diseases, is that the foreign substance is a paralyzant instead of an irritant, or is prevented by the nature of its environment from coming in contact with sensitive nerves. I do not believe that the leucocytosis in pneumonia is dependent upon the lung involvement or its extent, but upon the systemic intoxication.

PULMONARY CONSUMPTION*

By L. C. WEEKS, M. D.

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Notwithstanding the fact that every year there are hundreds of articles written and published in regard to tuberculosis, that sanatoria for the care and cure of the tuberculous are multiplying, that societies for the suppression of tuberculosis are springing up everywhere, and that a large and increasing number of cured consumptives are to be found in various walks of life, it must be confessed that the medical profession as a whole is not alive to its responsibility for the prevention of the disease among those who do not have it, but may contract it in the future, and for the cure of those who do have it, or, at least that percentage of them which, with our present knowledge, can be cured.

We are confronted by the fact that about 120,000 people die annually of this disease in the United States alone, which is about 10 per cent of the entire number of deaths. Our county necrological reports have their full quota of deaths from this cause, and there is hardly one of us who cannot count more tubercular cases occurring in his own community than of any other single disease. The physical suffering, the moral and intellectual degeneracy, and the economic losses produced by tuberculosis are constantly brought to our attention, yet in spite of this, it is probably not an exaggeration to say that a majority of our profession are merely playing the apathy and general lack of definite interest, to say nothing of the lack of knowledge concerning the cause, diagnosis, course of treatment, and

prognosis of tubercular cases, would be astonishing were it not that it is simply a case of history repeating itself, as it has repeated itself in various diseases in the past.

While the foregoing remarks pertain to tuberculosis in general, they are especially true of *pulmonary tuberculosis*, which is usually synonymous in the medical, as well as the lay, mind with *pulmonary consumption*.

The cause of pulmonary tuberculosis or pulmonary consumption is stated to be the bacillus tuberculosis, but that is only a partial statement. It is quite possible that this bacillus may become implanted in a perfectly healthy lung, that it may increase in numbers and produce typical tubercular lesions, but, in a vast majority of cases, if not in all, there is some predisposing cause without which the implantation would not have occurred. Similarly, even when an implantation does occur it does not produce consumption unless other diseased processes ensue and the mingled tubercular and pyogenic infection is thus enabled to produce the composite picture we call consumption. Hence, while it may not be improper to call the bacillus tuberculosis the specific cause and while there can be no case of consumption without it, it is manifestly improper in considering the cause of consumption to place the lion's share of the blame upon this bacterium.

There is no more lamentable fact brought to the attention of the physician who specializes in diseases of the chest than the fact that the great majority of consumptive cases are not diagnosed until it is too late to do them any good; that is,

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they are seldom diagnosed in what we call the first stages. For this there are several reasons; some good, others not so good. In the first place, a considerable number of these cases do not consult a physician until it is too late. We are all doubtless familiar with the clinical picture of the case which comes to us, or to which we are called, which gives a history of persistent cough, profuse purulent expectoration, rapid pulse, hectic fever, and general malaise. We recognize easily and at once the character of the disease, and too often are only able to smooth the path of the patient as he journeys slowly to the grave. In the second place, it too often happens that when a patient in the first stages comes to us we are either not sufficiently impressed with the importance of making a correct diagnosis or we do not know how to make a correct diagnosis, or sufficient time and opportunity are not given to make any diagnosis. We all hesitate to pronounce what to many persons seems a sentence of death. We dally along with "bronchitis," "bronchial cough," or some such meaningless or misleading term until the all-important time for recovery has passed by.

The fact that we do not know how to make a diagnosis of pulmonary tuberculosis in the initial stage, need not necessarily be discreditable to anyone, for there is undoubtedly a time after a tubercular implantation when there are no signs or symptoms by means of which a diagnosis can be made, but patients in such a condition seldom consult a physician. Many, however, do consult a physician in its earlier stages when some tell-tale signs and symptoms are present, and a correct diagnosis is not made because of lack of knowledge and of practice in reading what ought to be plain. Again, it is not always possible to discover all the signs of the disease at one time. Repeated examinations are necessary in some cases and a correct diagnosis cannot be made without a number of examinations, but this is contrary to the opinion, quite prevalent among the laity, that unless a doctor can tell by one examination he is untrustworthy.

Too much stress cannot be laid upon the importance of an early diagnosis of pulmonary consumption, because upon this depends the fate of the patient. Mistakes may be made in other diseases and the calamity not be irretrievable, but in this disease a postponement of correct diagnosis usually means a fatal issue for the patient. In order to make a diagnosis when called upon the first time, the family and personal history of the patient should be as closely scrutinized as his physical condition, for frequently side-lights from these sources are thrown upon the case without which certain diagnosis would be im-

possible. In searching over the family history we often find that some of the family have died of consumption or from chronic bronchitis, general break-down, suppression of menses, or some equally insufficient cause; the patient himself may take cold easily; or we find that he gets tired easily and has general malaise. While none of these symptoms are of necessity connected with pulmonary consumption, careful inquiry and sifting of facts often demonstrate a fairly close connection.

In the physical examinations there are a few points to be borne in mind, any or all of which, with or without a favoring family or personal history, may point to an existing tubercular lesion. Of these, cough, either with or without expectoration, naturally takes first place, and it is usually the first symptom which attracts our attention. A continued increase of the normal pulse-rate, without other discoverable cause, irregular rise of temperature at any time, a catarrh of any portion of the lungs or bronchi discovered by auscultation, and a gradual loss of weight—any of these or all taken together should invariably direct suspicion toward tubercular trouble. It is, of course, true that the discovery of the tubercle bacillus in the sputum settles the question, even in the absence of all other signs. It is a positive proof, but the absence of these germs in even a large number of suspected specimens of spittle, is practically valueless as negative evidence, and it is unwise to place too much dependence upon the absence of the germ even though a large number of specimens are examined. Lastly, in such a disease where time is an element of so much importance, it would seem eminently proper to give the patient the benefit of the doubt even when a lesion cannot be demonstrated, but where family and personal history is suspicious. Such an attitude may lead us into error, but not fatally.

The treatment of a case of consumption is something like the cooking of a fish, at least in its beginning. First catch the fish, and the remainder is quite easy, provided the patient stays caught. One of the hardest things in my experience has been to impress upon the patient the perilous condition which he is in, and the necessity for immediate, persistent, and long-continued attention to hygiene and diet, and to convince relations and friends in as kind and diplomatic a way as one can, that, while the co-operation is desired, meddling advice and interference will not be permitted. It is proverbial that the consumptive is cheered by hopes that gild with a false brightness and that, notwithstanding the most convincing proof, the patient will strenuously maintain that he has not contracted the disease,

—an instance of the wish being father to the thought, in an extreme degree. Whatever his station in life the consumptive has officious and knowing friends and relatives whose name is legion, like that of the demons who possessed the Gadarene lunatic. When once confidence between patient and physician is established, the way is comparatively easy, but the ultimate cure far distant. While one may be dogmatic and yet incorrect, the general consensus of opinion in regard to treatment seems to be as follows:

1. The majority of cases do better, mentally and physically, in a home climate rather than in a distant one.

2. The patient should be under the continuous and continued observation of a physician.

3. There should be rest—physical and mental.

4. Fresh, pure air in abundance, night and day.

5. Abundance of nourishing, easily digested food, special reliance being placed upon beefsteak, raw eggs, milk, oily nuts, and emulsion of fats.

It has been abundantly demonstrated by past experience that consumptives who stay in Minnesota do better than those who are transplanted to another climate. In many cases the long journey, the lack of care, the absence of friends, the long distance from home, and attacks of homesickness have early produced a fatal issue when all could have been avoided at home. And still the exodus continues, largely upon the recommendation of some who ought to know better. Two cases coming under my observation point to a moral of some value. A young man whose sickness had been diagnosed as consumption a year before was suddenly taken with alarming symptoms and hurried off to California. He never left his bed after going from the state, but died away from home in a strange land and among strangers. In the second case a young woman was sent to Florida in the midst of winter where she shivered for a couple of weeks in one of the draughty hotels of that balmy country, and at the end of that time was obliged to return on account of the severe illness of a little son. Since returning she has lived for the past nine months in a shack, has gained thirty pounds and the bacillus tuberculosis has not been found in her sputum for nearly three months.

The question of treatment at home or in sanatoria or colonies existing for that purpose, has been discussed more or less in the past and on the part of some with considerable heat. There is no reason why a consumptive in ordinary circumstances cannot have as much fresh air and nourishing food at home as in a tubercular colony. He may obtain rest and he may follow the directions of his physician, but, generally

speaking, the hygiene, dietetics, and disciplinary care of a consumptive in any stage can best be enforced in a sanatorium. In the home the patient soon learns the subtle art of substitution: something else is just as good; sleeping in a poorly ventilated room or on a damp piazza instead of in a dry, airy shack; eating delicately and taking a few raw eggs, or none at all; trying to bear some of the burden of business or household cares to sustain one's position in society. My experience, borne out by the reports of others, is that patients at home during a long-continued period of sickness are prone at times to disregard rules that are necessary but irksome, and they sometimes end by disregarding them altogether. Some patients are amenable to the requirements of a long course of treatment, and it goes without saying that these can be treated at home as well as anywhere, provided the practitioner with whom they cast their lot is properly informed. A majority of cases, however, require a residence at a sanatorium, in order to form the habits of life necessary to their preservation. A sanatorium, in addition to being a place in which people are to get well, should be a place in which they are taught the business of getting well. When the business is learned, they may be permitted to return home, for many are financially situated so that continued residence at a sanatorium until a cure is effected is impossible. The time required for a cure is not so short as we have been led to believe; and as tuberculosis is a disease which attacks the poorer class of people, the cost of treatment is prohibitory if length of stay is prolonged.

A limited stay in some place where the consumptive may be taught and trained in right habits of living is a practical necessity, and it is doubtful if the most favorable results will be attained until either private or state institutions are so numerous that all, or practically all, consumptives can be accommodated.

DISCUSSION

DR. J. W. BELL (Minneapolis): The doctor's paper is a very practical one, and I think a very fair and candid statement of the case as it stands to-day. I believe, with the writer of the paper, that the majority of our tuberculosis patients can be managed best at home, provided they can have proper care and food, and I believe this fact will become more apparent as we emphasize the educational phase of our crusade. Without doubt, suitable hospitals, state and municipal, are necessary, and especially valuable as educational centers, but the bulk of consumptives will be treated in the future, as they have been in the past, very largely in the home. I believe, in the management of our tuberculosis patients we shall adhere in the future, as we have in the past, not to institutional treatment, but to home and climatic treatment. Very few of us who are able to have treatment outside of a sanitarium, provided we could have the things needed, namely, proper food,

pure air, and proper care, would enter an institution. If this be true, why should we ask our patients, able to have the same comforts, to do that which we are not willing to do ourselves?

I do not want to be understood as objecting to state and municipal institutions; on the contrary, I favor them. We are obliged to have them—they are a necessity—but I still maintain that the majority of consumptives, especially private patients, will be treated in the future, as they have been in the past, at home or outside of institutions. In the management of tuberculous cases we can have at home as much fresh air and as pure air as we can get in any sanitarium. It is certainly safe to say that an individual on top of his own house, or in his own yard, can have more pure air than he can possibly have in a colony consisting of fifty to one hundred consumptives.

Now, as to discipline, it seems to me the fault is with the profession. If the physician is unable to have discipline in the home, it is his fault in the majority of cases, not the patient's.

I do not see any reason why a physician should assume toward a consumptive an attitude different from that which he assumes toward other patients—that of advisor and director. If we pursue this course we can carry out the discipline at home, in the majority of cases, as well as it is carried out in the average institution. So there is no necessity of entering an institution in order to have fresh air, good food, or proper discipline, and while I believe in institutional treatment for the consumptive poor, I still maintain that the remainder can be best treated outside of institutions.

DR. C. H. HUNTER (Minneapolis): I have nothing particular to add to this discussion. I am confident that the southwest is the best country in the world for that class of people. We know its limitations socially and industrially, but we know that in that climate we can live out of doors all the year round. It affords just the atmosphere for a consumptive. The one drawback is the industrial feature. I recall very distinctly the case of a young carpenter—and you can all parallel this case in your own experience. He was sick, going steadily down, having frequent acute attacks of hemorrhage, and a good deal of the lobe of one lung involved. He got married and went to Phoenix. I received a letter from his wife some four months later saying that her husband was apparently completely well, that he had been living out in the open, but, she says "We have come to the end of our rope. We are beginning to feel that we might as well have died in Minneapolis of consumption as of starvation here in Phoenix." Those are considerations that apply to every climate.

In regard to the plan of living on house-tops and on piazzas, we know that in a large city with its bad air and its smoke and other draw-backs, that is not a place for a consumptive. If they can possibly live in the southwest I still believe that is the place for them to go.

DR. W. E. BROWNING (Caledonia): I think the treatment of tuberculosis is about the same wherever we go. No doubt, a good many of us who send our patients to Arizona do so, not only for the good of the patient, but also for the good of the family. I think it is important that some steps be taken that the cases of tuberculosis be taken care of by some compulsory method as regards the disinfection of the houses during the life of the patient and after deaths from this disease. As it is we have no means of preventing the disease from spreading from one family to another who occupy the same house in turns, or people who are exposed constantly while in the house with a tuberculous patient.

DR. V. J. HAWKINS (St. Paul): As a general practitioner in a large city I have very little special experience in the treating of tuberculous cases. This is a subject of interest to the general practitioner, because he is treating those cases the same as he is treating pneumonia, typhoid, etc. I like this paper. It is one of the best papers we have ever had on tuberculosis in this society; it is practical. The patient must be treated at his own expense; practically he should be. Assuming that to be the case, he must be treated at home. Now, in the plan of treatment outlined, it seems to me, Dr. Weeks did not emphasize sufficiently the importance of sunlight and exercise. As a rule these patients either go into a corner of a warm room in the dark or sit under a porch or shade-tree. My little experience teaches me the need of sunlight and plenty of good air. We have both of those features in Minnesota, and we can get them in Minnesota as well as they can get them in the southwest, as suggested by Dr. Hunter. His experience can be duplicated by probably the fifteen hundred physicians of Minnesota. There is hardly one of them but that could report a similar case. I get many of them, and some of my best friends, physicians and druggists, are in the southwest at the present time and are entirely recovered, and they were as sure of death had they remained in Minnesota as any case I have ever prognosticated. They are now well, and not only well, but they are making a good living there. I mention this so that physicians may know that their patients can go there and make a living. It is not necessary to go to the southwest and settle down and pay board. If they go out there with the determination to make a living they can do so. The majority of people there make a living, and others can do so if they try. They can live in a tent the year around, and they can make a living there as well as anyone else, no matter whether a man is a carpenter, druggist, or doctor. It requires some energy to make it there the same as it does here. The great thing in my mind is to put energy into these people, but their friends think they are going to die and so they do not encourage them. I have been preaching to my people for the past ten years that consumption is not fatal. When a patient tells me he has had trouble with his lungs it does not mean to me that he is going to die. If you can encourage his friends to keep up the energy of the patient we shall cure a great majority of them. So far as infection or disinfection of the premises is concerned, that cuts very little figure, because tuberculosis is almost universal.

DR. LEON W. HYDE (Moorhead): I am very much impressed by Dr. Weeks' most practical and excellent paper and the way he handled the important parts of his subject. There is one thing I was particularly impressed with, and that is the importance of early diagnosis. Now, as the doctor said, it is impossible at all times to make a successful diagnosis, and in order that we may treat these cases successfully it seems to me that too much importance cannot be placed on the examination of the personal and family history of the patient. Often these cases have an incipient bronchial form, and they come to us without any means of arriving at a diagnosis if we are unable to elicit the family history of tuberculosis, and we have even found that the patient has contracted the disease by means of personal contact with consumptives. In every case of which we are not certain, the patient should be given the benefit of the doubt.

DR. L. W. DAY (Minneapolis): A great deal has been said to-day of which I heartily approve. What I rise to state is, that when we say "We have to keep up our energies in tuberculosis," we know the essential thing is not to exercise our bodies, but to obtain as much rest as we can in order that the body may build up as rapidly as possible. The energy which is going to consume our

vital force is going to be detrimental to the cure of the disease. For that reason I do not think we ought to send our patients to New Mexico or any other remote place. A strong man has a hard time to find something to do in New Mexico, let alone a man who is sick. As for keeping patients out of doors here in Minnesota, I have succeeded for several years in keeping them outside even in winter, and they have all gained in weight and their course has been just as favorable here as it would have been elsewhere.

DR. L. C. WEEKS (Essayist): The educational question is one which seems to me ought to be emphasized a great deal. In talking with patients who have had consumption for a considerable length of time I have learned that they have a vast mass of information on the subject of consumption, and some can give me pointers, and yet some have very erroneous ideas. We ought to push the educational phase as much as possible so that physicians and the public may understand the facts in regard to consumption. I am heartily in favor

of home treatment of consumption in Minnesota. I do not believe in sending patients west and south when the fact is that under the very best conditions in the government sanatorium in Arizona the results have not been as good as at the sanatoriums in the northern part of the United States. It is a question of pure air, not of dry or moist air. We know that in moist air the percentage of cures is greater than it is in the south where the air is dry. The majority of people cannot support themselves there. I know there are a good many teachers who have consumption who want to go to Colorado, but there is a state law which prevents them from getting a position in that state. They must have a certificate to show they do not have consumption before they get a position. I believe myself, when we come to the matter of treatment it is something the state must take hold of. There is no question but that they can get the same amount of fresh air on the housetop as they can at the sanitarium, but they do not do it. That is the experience I have had, and it is the experience of other people.

STATE HOSPITALS FOR THE INSANE THEIR RELATION TO THE PUBLIC*

BY E. C. ERICSON, ESQ.

ELK POINT, S. D.

Mr. President and Gentlemen:

In accepting the invitation to prepare and read a paper at this meeting I did not at first appreciate that my audience would be a medical one, and, to some extent, composed of men who have made the care and treatment of the insane their life work. I realize that nothing I may say would be of any value to this Association in so far as medical lines are concerned, and what suggestions I shall make will be those of an observer outside of the ranks of your profession, who possess no special knowledge of the subject, but only such general ideas as would impress themselves upon the ordinary citizen.

The state hospital for the insane of to-day marks the advancement of civilization and humanity as forcibly as anything in any other public relation of life; and yet the time of the bedlams and madhouses, with their cells and shackles for those entirely or partially demented, where the public shirked its duty and responsibility by farming out the insane to the lowest bidder, is not very remote. Within the lifetime of many here, confinement was the

principal feature in the public or private care of the insane, and intelligent treatment and humane methods were the exception rather than the rule. The former name *asylum* and the present term *hospital* are indicative in themselves of the great changes that have come over the aim and purpose of institutions of this kind. The principal object of the asylum was to confine; that of the hospital is to improve and, where possible, to restore.

The line between reason and its loss is not sharply defined. At certain times and under certain conditions, very little is required to completely dethrone the mind, and especially, so it seems to me, is this true at the inception of the difficulty. Then, if ever, the rude shock to the sensibilities which undue restraint causes should be avoided and the impaired mind should not be subjected to the further strain of physical fear resulting from grated windows, bolts, and bars. One of my boyhood remembrances is that of a leading insane asylum, as it was called, in the suburbs of New York City, and the high, stockade-like fence enclosing the grounds, the grated windows and the deserted looks of the place impressed me fully as much as a prison would. Now the

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chief feature of the up-to-date hospital is the absence of any thing in its make-up which would make the ordinary patient feel he was going to jail instead of a hospital.

Helpless infancy appeals alike to all classes and conditions, and those who are practically babes by reason of loss of mind should receive the utmost consideration at the hands of the state.

The rights of the insane, and the measure of opportunity and duty of the state, are one. No right of those unfortunately bereft of reason should be denied by the state. What are those rights? I can suggest only some of the leading points which impress my mind as their due and our privilege.

The present treatment of one charged as insane in this and many other states, before he reaches the hospital and while his case is under investigation, is, it seems to me, susceptible of improvement. Under the law of this state when an information charging insanity is laid before the county board of insanity commissioners, a warrant, directed to the sheriff of the county, is issued, commanding him to bring the sufferer before the board. He is brought to the county-seat, and usually confined in jail, and locked up to await his hearing. Very little is needed in many cases to complete the work of destruction of the mind already begun, and I have witnessed in my own county case after case where the patient was quiet and composed beforehand, and where the shock and shame of what was practically a public arrest and incarceration in jail, behind iron bars, produced violent mania for the time being. I have in mind one case particularly where I had long and personal acquaintance with the party up to his confinement, when he was quiet and harmless, but the fear and shame of the arrest while awaiting investigation of his case and transportation to the hospital, caused him to become violently demented, shouting and raving day and night until exhausted. That man is in this hospital to-day, as quiet as ever. Another case was that of a woman I had known. She had lived a quiet, even life in the country until her derangement set in. She had to be kept at the county-seat a few days until the necessary preliminaries could be complied with, and she became wild and raving. Such shocks certainly can not fail but to have an injurious effect and to lessen and, in some cases, to destroy the prospect of recovery. Except where the parties are dangerously violent, or suicidal or homicidal, it seems to me that the investigation by the county board had better be at the home of the patient, and that, if adjudged insane, the patient should be allowed

to continue at home until the arrival of the hospital attendant charged with his transportation. The cost to the state would not be materially increased, because usually the mileage of the witnesses thus saved would off-set that of the board. In addition, a more thorough examination could be made and a more complete history of the case could often be obtained; and the non-violent patient would arrive into the comparative freedom and home-like air of the hospital without undergoing the hurtful shock of arrest and jail confinement.

I do not wish to be understood in the foregoing remarks as in any way criticising the sheriffs or jailers of this state, but simply to suggest what seems to me to be a better mode of examining and keeping patients pending their being taken to the hospital. Some years ago we took a step in advance in having skilled hospital attendants take the patient from the jail to the asylum instead of having the sheriff or jailer do so as formerly. Now, let us cut out the jail and detention feature entirely, except in violent or dangerous cases.

The patient has a right to a comfortable home during his stay at the hospital, which should be pleasant, cheerful, airy, and wholesome, and, above all, fire-proof—in short such buildings as this state has added to this institution in the last few years. No building should be used for the housing of the insane unless absolutely fire-proof, and, in addition, furnished with ample means for extinguishing fires. Occasionally we read of the resulting holocausts where fire-traps are used for the insane, and the hearts of all go out in pity and horror at the awful recitals. The state must make no mistake in this matter. All state buildings where people are massed should be fire-proof, and particularly so where those live who no longer have the lamp of reason to guide their feet.

The ideal hospital should be a home in every sense. Many of the inmates will never know any other. The recovery of those curable will be hastened by having their environment as homelike and, consequently, as free from restraint as possible. The curable cases are, and should be, the class upon which all the remedial agencies and efforts of the hospital are marshalled. For them there is the possibility of recovery and of restoration to friends and home; and the true aim and object of the hospital is more nearly attained in the line of restoring the suffering mind than in merely sheltering those totally wrecked.

No niggardly policy should be pursued by the state in maintaining its hospital for the insane. Those in charge of these unfortunate

wards of the state should be given, by liberal appropriations, every facility to secure the very highest possible percentage of recoveries. There should be nothing lacking in staff, equipment, or organization which experience has shown to be of value in calming and restoring the diseased mind. Legislatures, as a rule, will respond readily to the call of those in authority for needed appropriations. It goes without saying that no employe who is ever cruel or lacking in that kindness, solicitude, and patience which sickness is always entitled to, should be retained for a moment. Our hospitals are, more and more, being taken out of the domain of politics, and the executive is, and of right should be, empowered with the absolute right of instant dismissal of all employes found lacking in kindness or ability.

The public generally, and especially those related to inmates, should be invited and urged to visit the hospital. Some adverse criticism exists of institutions of this kind, which is, in this day and age, usually unfounded, being based either upon the statements of irresponsible patients or upon the unsavory reputation borne by the mad-houses of old.

The boards of county commissioners, the county commissioners of insanity, and other public officials should be urged, and it should be made the duty of some proper official from each county, to visit the hospital at least once a year to investigate the condition of all patients from his county, and opportunity should be afforded for free and private communication at such times between such patients and the officer.

It is also suggested that, as the hospitals for the insane in this state are crowded beyond their capacity, and as many patients are both incurable and harmless to themselves and others, the hospitals be relieved by the return of such cases to their proper counties to be cared for either by friends at the expense of the county or at the county poor farms or asylums. This would afford needed room for those still within the possibility of a cure, and would cause the county but little, if any, increase in expense. If this plan is not feasible in the more sparsely settled counties, district asylums could be built by a number of counties, and the idiotic, the imbecile, the senile dement, and the incurable and harmless insane could be housed and cared for therein, relieving the hospitals of a large portion of their present inmates who are not properly there.

There is another matter in connection with this subject of which I wish to speak, and that is the mode prescribed by law in this state

for obtaining service of process upon an insane defendant, which is by serving the summons or notice first upon the guardian of the insane person and, in addition, upon such insane person himself.

This has always struck me as an anomaly in legislation. Here is a man judicially declared of unsound mind, and hence in law having no intelligent will, unable to give any valid consent, and not responsible for his own acts—a man who could not in *propria persona* assert his rights in court, but must appear by his guardian; and yet he must be personally served before the action is properly pending. There is some reason in the case of a minor that he be served as well as his guardian because he, though an infant in law, may be of years of discretion sufficient to appreciate the nature of the case, and in any event such service can not hurt him, but in the case of an insane defendant the law should make different provision. An insane man or woman should never be personally served unless the superintendent of the hospital, if the defendant be under his charge, or a reputable physician, if otherwise, certify in writing, and such certificate to be filed in the cause, that in his opinion such contemplated service of summons would not injuriously affect the mind of the defendant. The service upon one totally insane is a farce, and upon one partially demented it would only be a source of worry and further strain upon the enfeebled mind.

In lieu of service upon the insane defendant when no such certificate can be had I would suggest service in behalf of such defendant upon the attorney-general of the state or upon the state's attorney of the county of the defendant's residence, or upon the chairman of the board of county commissioners, such service to be in addition to that now prescribed by law upon the guardian.

Institutions of this kind should be divorced from politics, and the decree should be absolute and irrevocable. The spoils system has no place in any of the educational, charitable, or penal institutions of the state, and certainly in the case of hospitals for the insane it is a shame and an outrage that men are removed or appointed by reason of political pull. If there is any place where as little disturbance as possible should occur it is in the sick room. No one would think of employing a doctor by reason of his views on this or that political issue. What we ask is, "Is he qualified as to knowledge and skill?" Why should our helpless insane become the sport or prize of politicians? It is to you, the doctors of the state, that we look especially to prevent the rape of

our institutions of this class. An earnest and united "No" from your profession should be given if the experience of the past in this hospital is not to be repeated, and your superintendent and his medical staff and attendants made to walk the plank at the behest of political bosses.

No test for office or appointment should ever be considered here other than efficiency. And once an efficient man or woman is given a place in an institution of this kind, he or she should remain unaffected by the rise or fall of the political tide. The longer such service, if efficient, continues the more valuable to the state it becomes. The peculiar characteristics and temperaments of patients of this kind can be learned only by long-continued observation; and their improvement or cure is usually a work of time, and should not be retarded by a change of officers, doctors, or other persons in charge, without good cause.

The present superintendent of this hospital has been connected with it for over fifteen years. We

all know how some years ago owing to a political convulsion in the state and change of parties in control he was removed purely for partisan reasons. He had for years been planning and developing designs for a completely equipped and up-to-date hospital, with its various buildings to be so erected, grouped and equipped as to constitute a perfect institution. He was, fortunately for the state, re-instated inside of two years, and as we have gone through these beautiful buildings, durable, fire-proof, and perfect in all their appointments, designed by him and constructed at about one-third of the ordinary cost by reason of his utilizing inmate labor and the materials close at hand, and have seen the comfortable surroundings and appearance of the patients, we can realize the great benefit the state has derived from his continuance in office. And the same reason and rule applies everywhere.

May these institutions never want for courageous and watchful friends to keep them up to the highest possible standard, and free from the hands of the spoilers.

SURGERY OF THE GALL-BLADDER AND BILE DUCTS*

By JOHN T. ROGERS, M. D.

ST. PAUL

Volumes have been written upon this subject, and the last word has not been said, but no branch of surgery has been more successful and satisfactory.

A brief review of the anatomy of the gall-bladder and bile passages will be necessary for a comprehensive understanding of their pathology and symptomatology. The gall-bladder is a musculomembranous sac, pear-shaped, lined with mucous membrane within, and covered with peritoneum, except that portion which lies in contact with the liver above. Its capacity is about one and one-half ounces. It is three to four inches in length, and one and one-half inches in width at the fundus. It is situated just under the ninth costal cartilage, at the rib junction. Posteriorly, it lies in close relation to the transverse colon, duodenum, and pyloric end of the stomach. Its walls become somewhat thickened as it approaches the cystic duct, and ends in an S-shaped curve. At this point there is situated a lymphatic gland, which, becoming enlarged, may

obstruct the cystic duct. At operation this enlarged gland is not infrequently mistaken for a stone impacted in the cystic duct. The pelvis of the gall-bladder is a little pouch just at the entrance of the cystic duct, formed by a duplication of mucous membrane. The cystic duct opens at the upper portion of the pelvis. It is about one and one-half inches in length, and one-eighth inch in diameter. In most instances its diameter is smaller than that of the common and hepatic ducts. The hepatic duct is about two inches in length, and one-fifth of an inch in diameter. It is slightly wider below than above. On its left is the hepatic artery, and on the right, the portal vein. The common bile duct is somewhat more than three inches in length, beginning at the junction of the hepatic and cystic ducts, and ending with the canal of Wirsung in the diverticulum of Vater in the duodenum, about four inches from the pylorus.

For the purposes of description Moynihan divides the common duct into three portions: first, the supraduodenal; second, the retroduodenal or

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pancreatic; third, the transduodenal or interstitial. The first portion is approximately one and one-fourth inches to one and one-half inches in length, ending at the pancreas and lying in the free edge of the gastrohepatic omentum. On its left is the hepatic artery, and behind both artery and duct is the portal vein. These structures, together with the lymphatics and nerves, form the outer boundary of the foramen of Winslow. "Sometimes the superior pancreaticoduodenalis artery passes over to supply the gall-bladder, and may be injured in common-duct operation, leading the operator to think he has injured the hepatic artery. Likewise a large vein may cross the duct, and, when injured, lead to the supposition that the portal vein has been injured" (Mayo). Along this portion of the common duct there is found a chain of lymphatic glands, two to four in number. These, like the single gland at the neck of the gall-bladder, may, when enlarged, obstruct the common duct, or may be mistaken for an impacted stone. The second or retroduodenal or pancreatic portion of the common duct, is about one and one-fourth inches in length. In the majority of instances it lies imbedded in the pancreas or in a deep groove in the pancreas. Consequently, to reach the duct in this portion would surely mean injury to the pancreas, with its resultant complications. The third, or transduodenal or interstitial portion, is that which passes obliquely through the inner and posterior wall of the duodenum. It is about one-half inch in length. Opie has shown that a stone lodged here may throw the bile current directly into the duct of Wirsung, causing acute pancreatitis.

A perfectly drained gall-bladder never becomes diseased. Any interference with perfect drainage will predispose to disease. Fresh bile is normally sterile; stagnant bile, while not a good culture medium, does not prevent bacterial growth. All inflammatory condition of the gall-bladder and bile passages are due to bacteria. They may gain entrance through the portal vein and hepatic artery or through the common duct from the duodenum. Adami asserts that the bacillus coli is constantly finding its way to the liver, through the portal circulation, where, under normal conditions, it is destroyed by the liver cells, but when the cells are disabled by the toxic products of bacteria it may reach the bile, and spread through the gall-bladder and bile ducts. Kehrer, on the other hand, believes the bacteria travel along the common duct from the duodenum. No doubt these opinions are both correct. Each theory has its strong advocates.

The germs most often found in the gall-bladder and bile passages are, in their order named, the bacillus coli communis, the typhoid bacillus, streptococcus, and the staphylococcus, aureus and al-

bus, and the pneumococcus. The bacillus coli is by far the most often found, either alone or in combination with others.

Bacterial invasion produces inflammatory changes in the walls of the gall-bladder and ducts, the degree of which depends upon the virulence of the bacteria and the power of individual resistance. Gall-stones are most often manufactured in the gall-bladder. It is possible, however, for stones to be formed in the ducts. The method of formation is no longer a matter of speculation. Mignot has demonstrated that the attenuated cultures of bacteria cause a mild cholecystitis, with increased discharge of mucus and over-production of cholesterolin. Ehret and Stoltz have demonstrated that anything which interferes with the normal motility of the gall-bladder favors the growth of microorganisms.

The factors, then, which enter into the formation of stones are increased mucous discharge and over-production of cholesterolin, with stasis of bile. A virulent culture introduced into the gall-bladder produces a violent inflammation, but will not cause gall-stones. Moynihan says that five or six months are necessary for the production of a perfect stone. Once formed, a stone, in whatever location, either in the gall-bladder or ducts, may, and usually does, increase in size, the same causes acting in its increase as obtained in its origin. Kehrer says that almost every adult body exhibits gall-stones, but that only 5 per cent of gall-stone subjects feel anything of the presence of the unbidden guests, and 95 per cent remain, at least, entirely free from severe suffering. This is undoubtedly a great exaggeration. Schroder found at autopsy on male subjects 4.4 per cent, and in female subjects 20.6 per cent. Gall-stones are about four times as frequent in women as in men. The average age is about forty. Schroder's table shows only 2 per cent in eighty-two autopsies under twenty years.

Reidel and many others believe in heredity as a factor in gall-stone disease, but in the light of our present knowledge it is inconceivable, that heredity plays any part in this disease. It has been pointed out above that cholecystitis is always the forerunner of gall-stones, and that it must be mild in order to produce gall-stone, but a severe inflammation may take place without the formation, of gall-stones. A rapidly spreading inflammation, which destroys the mucous membrane and muscular coats, leaving only a mass of fibrous tissue, eventually results in a much contracted gall-bladder. A violent inflammation, obstructing the cystic duct and extending through the walls of the gall-bladder, causes a local peritonitis with adhesions to stomach, duodenum, or colon, or the distention and ulceration may cause a perforation and septic peritonitis. Quincke says this is espe-

cially apt to occur in typhoid fever. In one of my own cases during the first week of typhoid, a violent cholecystitis developed, with a greatly distended gall-bladder, jaundice, high temperature, and much pain. A cholecystostomy with drainage relieved the patient, and the typhoid ran its course. An acute cholecystitis without gall-stone may subside under local and internal treatment, but should be watched with great apprehension, as operative interference may be required at any moment. Cholecystitis with gall-stone may be said to be always a chronic condition, subject at any time to acute exacerbations. The mucous membrane may be only edematous or ulcerated or indeed gangrenous.

The walls of the gall-bladder are usually much thickened, as a result of repeated fresh infections or the lighting up of old infections. On the other hand, a stone impacted in the cystic duct or in the pelvis, obstructing the cystic duct, may cause a mild inflammation, with distension of the gall-bladder and thinning of its walls. Not infrequently the gall-bladder in such cases is enormously distended, and its walls are almost as thin as tissue paper. Such gall-bladders usually contain a clear viscid mucus or sterile pus, the bile having been completely absorbed. Gall-stones may become buried in the walls, and lie there quietly for an indefinite time, or a fresh infection may cause them to perforate the walls, and lie in a mass of adhesions or form a fistula into the stomach, duodenum, or colon, through which they can pass into the alimentary tract; or, perforating into the liver, they may lie buried in its substance or cause a liver abscess.

Not infrequently, partitions are formed in a thickened gall-bladder, and several stones may occupy each its own compartment. Sometimes a stone occupying the fundus and another the pelvis, the intervening walls contracting, gives the typical hour-glass contraction. It sometimes happens that a gall-bladder will contract down on a very small stone, and will be very difficult to discover at operation. In fact the gall-bladder as a result of cholecystitis and stones may be of any size, from that of a pea to that of a child's head. Its walls may be one and one-half inches thick or as thin as tissue paper.

What has been said of the gall-bladder, is equally true of the common duct, except that its walls are usually thickened, certainly never as thin as in hydrops of the gall-bladder. An obstructing stone, however, may cause great distension of the common duct, so much so that it has been mistaken for cysts of the pancreas, distended gall-bladder, and hydatids. Edgeworth describes a case in a child four and one-half years old from whose common duct he drew off 29 ounces of normal bile. Darlach opened a cyst

as large as a child's head, formed by the dilatation of the common duct. Many dilatations of the common duct are sufficient to allow anastomosis with the intestine to be made. A stone in the common duct does not often completely obstruct. The ball-valve action of Fenger allows the bile to pass around the stone until fresh infection causes temporary blocking of the duct. Suppurative cholangitis is perhaps the greatest danger to be apprehended in obstruction of the first portion of the common duct. Opie has demonstrated that the etiology of pancreatitis is intimately associated with obstruction and inflammation in the second and third portion of the common duct. Malignant disease of the gall-bladder and bile passages occurs, according to Kehr, in about 14 per cent of all gall-stone cases. Rolleston says the fundus is the convenient situation for the origin of carcinoma, and the distal compartment of an hour-glass gall-bladder may be the starting point of the growth. This is due to the fact that the fundus is the most dependent portion, and consequently most liable to the irritating effects of gall-stones. It may occur, however, in any portion of the biliary apparatus, and is practically always due to gall-stones. Musser, in 100 cases, found gall-stones in 69, and in only 3 cases could stones be excluded. According to Rolleston carcinoma always springs from the mucous membrane, and spreads by continuity.

With our present knowledge of etiology and pathology its symptomatology is readily comprehended. In my experience most gall-stone patients complain of disordered digestion, gaseous distension of the stomach, nausea, and vomiting for some time previous to their attacks of gall-stone colic. Pain is an early symptom, either the dull aching pain of increased tension or the more or less acute pain of inflammation. As the inflammation increases the pain spreads over a wider area, passing around under the right scapula. There is always more or less rigidity of the upper right rectus. J. B. Murphy says:

"The most characteristic and constant sign of gall-bladder hyper-sensitiveness is the inability of the patient to take a full inspiration when the physician's fingers are hooked up deep beneath the right costal arch below the hepatic margin. The diaphragm forces the liver down until the sensitive gall-bladder reaches the examining fingers, when the inspiration suddenly ceases, as though it had been shut off. I have never found this sign absent, in a case of calculus or in infectious cases of gall-bladder or duct disease."

Boas calls attention to a painful area about one inch to the right of the twelfth dorsal spine. It is never found on the opposite side. When once present it always remains, and may be a valuable sign in latent gall-bladder disease.

Gall-stone colic is so typical that it requires no description. There is, however, much diversity of opinion as to its causation. Kehr, Reidal, and others believe the colic is not due to the passage of gall-stones, but to an inflammation of the gall-bladder, causing a stretching of the gall-bladder walls by increased secretion. Rolleston says "biliary colic may be due to inflammatory, or to mechanical obstruction, or to both combined." Moynihan is of the opinion that colic is caused by the muscular efforts of the gall-bladder to expel a foreign body, and that the pain ceases as soon as the foreign body becomes impacted. It must be in transit to cause colic. Jaundice occurs in only about 14 per cent of gall-stone cases. It occurs only as a result of gall-stone obstruction to the biliary ducts. Continuous or intermittent jaundice means some complication has arisen, such as cholangitis, pancreatitis, or malignant disease. Remittent jaundice points strongly to stone in the common duct, with the ball-valve action of Fenger. A gradually increasing jaundice without pain and with distended gall-bladder, means malignant obstruction, Courvoisier's law, in case of chronic jaundice, due to blockage of the common duct, is that contraction of the gall-bladder, signifies that the obstruction is due to stones; a dilatation of the gall-bladder, that the obstruction is due to causes other than stone. The value of this law is thoroughly recognized by all clinicians. Mayo Robson says: "Distention of the gall-bladder, accompanied by jaundice, has, in all cases which I have observed or in those where I have operated, turned out to be dependent on cancer, either of the head of the pancreas or of the common duct."

The temperature in diseases of the gall-bladder and biliary passages depends on the virulence and location of the infection. In the gall-bladder, on account of the absence of lymphatics, a very virulent infection will cause little or no fever. Cystic duct obstruction and infection may cause a rise of temperature. In common duct obstruction, infection always causes a sharp rise in temperature, with chills and sweating. The temperature of common duct obstruction is described by Moynihan and Murphy as being characteristic. The "steeple chart" of Moynihan Murphy speaks of the "temperature angle of cholangic infection."

During or shortly after an attack of gall-stone colic the urine always contains bile. The feces should be examined for stones; when found, the diagnosis is certain. The absence of stones in the feces has no diagnostic significance. Differential diagnosis: appendicitis, renal colic, gastric ulcer, and duodenal ulcer are the most common conditions mistaken for diseases of the biliary passages. In appendicitis the pain is usually below or at the umbilicus, while that of gall-stone

disease is situated above the umbilicus. Appendicitis is a disease of early life, while gall-stones occur most frequently in advanced life, very rarely before twenty. Appendicitis is not often accompanied by jaundice while about 14 per cent of gall-stone cases have jaundice. In appendicitis the right lower rectus is rigid and there is marked pain at McBurney's point. In gall-bladder disease the upper right rectus is rigid; there is pain on pressure over the gall-bladder, and pain radiates to the back under the scapula. In renal colic the painful point is under the twelfth rib, radiating downward to the testicle or the ovary. Urinalysis shows an absence of bile and the presence of blood or pus. There is an increased frequency of urination.

In gastric ulcer we differentiate by the location directly underneath the ensiform cartilage, passing to the left, and behind underneath the left scapula. The pain of ulcer is increased by eating, and comes on at a definite time after eating. The history of vomiting blood, with increasing anemia, points strongly to ulcer. There is said to be an increase of hydrochloric acid in simple ulcer, while in gall-stone the acid is slightly decreased or normal. In duodenal ulcer the pain is located to the right, but has a definite relation to the ingestion of food four or five hours after eating. The pain is constant, as compared with the intermittent pain of gall-stone. There is usually blood in the stools; no bile in the urine, but usually an increased amount of indican.

Treatment.—In the absence of contra-indications, such as extreme old age or serious accompanying disease, the treatment is always operative. Early operations in gall-bladder disease may be termed preventive surgery. If operation is undertaken while the disease is confined to the gall-bladder the mortality is considerably less than one per cent, while operations performed for the various complications due to the extension of the disease, reach a mortality of 14, 20, and 30 per cent.

We venture to predict that in the near future operation for the complications arising from gall-stone disease will be a comparative rarity. In my experience we see 50 per cent less complications now than ten years ago. The reason for this is obviously early diagnosis and early operation.

FOREIGN BODY IN THE ORBIT

T. A. Boot reports the case of a patient from whose eye he removed a fragment of clay pipe-stem discolored by age and tobacco. It was one and five-eighths inches long, one-quarter of an inch in its widest diameter, and weighed fifty grains. It had been lodged in the orbit forty-nine days. This case illustrates the remarkable tolerance sometimes shown by the body tissues to insult from foreign bodies.—Medical Record.

consumption in the family to which they are going, and that it observes thorough cleanliness.

Rule 5. Have the school teacher give you a guarantee that there is no consumption in the school before you send your children to school.

Rule 6. Be careful in hotels and boarding-houses, especially where there are rugs and carpets. Remember the temptation there is for everybody to spit on the carpet and step on the soiled spot if there is no spittoon provided in a room. One night's expectorate from a consumptive is enough to infect the whole of Minnesota's population.

Rule 7. Have no room in common with a consumptive, and do not occupy a room after him until it is thoroughly cleaned, repared, and aired. Remember that direct sunlight destroys the contagium in a few hours.

Rule 8. A consumptive's washing ought to be washed by itself.

Rule 9. A consumptive ought not to prepare the food and food-stuffs for others. A consumptive ought to have separate table utensils.

Rule 10. It happens that our domestic animals show signs of tuberculosis, and milk is found to contain the contagium. The meat or milk of a tuberculous animal should not be used for food.

Dr. Grytenholm, writing to the Secretary of the State Board of Health, under date of Aug. 14, 1906, states that these circulars had a great influence in diminishing the amount of tuberculosis in Goodhue county.

It is to be hoped that physicians throughout the state will now use the material placed within their reach by the Minnesota State Board of Health, for the education of all in the prevention of this dread disease.

A CORRECTION

A line seems to have been dropped out of a communication from Dr. Bracken which appeared in our last issue, and, as is generally the case in such mistakes, the missing line contained the pith of the entire paragraph, which is reproduced herewith, the missing line being in italics:

"I cannot see how any sane person would expect the local board of health to do otherwise than close a school in which smallpox had appeared until all danger of future infection had been removed either by the local board of health doing its duty and requiring the pupils *to be vaccinated, or until the centers of infection had been removed by the recovery of those infected.*"

THE DOCTOR AND THE INSURANCE FEE

Since the adoption by the State Association of the resolution regulating the fees for insurance examinations, various county and district societies have passed similar resolutions or have placed themselves on record as in sympathy with,

and ready to abide by, the resolution of the House of Delegates. The feeling that insurance fees should be elevated is widespread and promises to continue.

An insurance agent who approached a prominent physician in a small town in the southern part of the state with a proposal that he examine applicants for an old-line company for \$3.00 was met with a refusal. The agent laughed and said there were plenty of men who would gladly accept the offer.

Several of the prominent men throughout the state have written the companies for which they had previously made examinations, resigning their office unless the minimum fee was made \$5.00. In the majority of cases the resignations have been promptly accepted and other men appointed to fill the vacancy. A man who has the courage to stand by his principles by supporting a general resolution and resigning his place as examiner is too valuable a man for the company to lose, and the company which accepts such a resignation is not a safe company to insure in. The man who openly accepts an appointment as examiner for such a company after reading the resolution adopted by his state organization is disloyal to himself and his fellowmen. He virtually forfeits his membership in every medical society of which he has been a member. The companies will still continue to get business and medical men will be found who will examine applicants. What will be the result? A reduction in the amount of insurance written, ill feeling among medical men, and, ultimately, a weeding out of cheap companies. The large companies will put salaried men in the large cities, and the agent in the smaller towns will divide his portion of the premium in some way to make it appear that he has paid the examiner the fee required by the resolution. The average examiner is required to take out a policy and his premiums are paid for by his examinations.

How long this arrangement, or any other plans, will hold out remains to be seen. The fear of the House of Delegates is that there will be found a sufficient number of medical men who will secretly cut fees in order to get business. If all of the examiners would hold out for adequate fees the companies would soon accept the schedule.

A Minnesota surgeon of national prominence took out two policies twenty years ago, paying his premium in one lump sum based on a ten-year payment plan, with the endowment due in twenty years. Both policies were paid this year. He received from the New York company a little

more than 2 per cent compound interest on his original payment. The Northwestern company paid him about 3 1-2 per cent on the original investment. This is an illustration of the different ways of doing business and shows one of the reasons for the New York company's effort to reduce the examiner's fee. The company gets the benefits and the examiner gets the smaller end.

It pays to insure in a good company, but it does not pay to examine for a company that seeks to belittle the value of the examiner's services.

CORRESPONDENCE

"THE RIGHT TO USE THE KNIFE"

Cloquet, Minn., Aug. 27, 1906.

EDITOR OF THE JOURNAL-LANCET:

An editorial article in the Duluth News-Tribune of May 13th, under the title, "The Right to Use the Knife," was so misleading to the laity, and so full of obvious personal malice, and, withal, so unjust that the medical profession of northern Minnesota cannot fail to have felt hurt by it.

In the first place, is it not now very generally conceded that the profession of medicine and surgery stands to-day better equipped by medical knowledge, surgical means and technic than ever before in the history of man? Our colleges now require four years of hard practical work in preparation and some a previous academic course. The student is enabled to witness, day after day and month after month, all kinds of major operations, and later is permitted to demonstrate his fitness and acquire technical skill in the hospitals.

The article in question purports to be very large and sweeping, but in reality it narrows down to a "knock" at the "men fresh from college in the smaller towns." This editorial writer, probably with good intentions, makes the statement that "they" (meaning the doctors in smaller towns) "cut and kill at the expense of no one knows how many victims."

Now, as a matter of fact, when a young physician and surgeon enters a town to locate, he casts his lot with its people, and becomes one of them, with a closeness that our worthy critic probably does not realize. He is imbued with a high moral ambition—his very profession engenders it. He realizes, furthermore, that to be successful and to secure a reputation for in-

tegrity and ability, his actions must be clean, and his work careful and conservative. This is the standard of excellence that is demanded to-day of the physician and surgeon, as never before, and it is well that this is so. In the event of a serious surgical case, the young medical man weighs carefully all the salient points, and if he decides to operate he has adequate help, he remembers and makes use of all latest technical principles, with the most rigid antisepsis, and, in the great majority of cases, he wins out. His action is justified, both by the purse of the patient and by the trust and confidence of his parishioners. The innumerable phases of accident and sickness that he meets, and meets promptly, at times when a few hours or minutes mean the difference between life and death; the wee mites of humanity whose frail spark of life he is able to fan and nurse along; the noble mother in her perils; the brave son or stalwart head of the family struck down in the midst of his toil, by appendicitis, it may be, that growing malady of our newer civilization—who is there to save in such emergencies if it be not the country practitioner?

It is thus the privilege of the surgeon in the smaller towns to save many many lives, whether he be a young man or an older man. The fact that the younger men, "fresh from college," are superseding the old fellows in country towns all over the state, and "getting the business" speaks well for the surgical ability and general fitness of the graduates of the University of Minnesota, Rush, Chicago Medical, Ann Arbor, etc., which are the colleges largely represented by the new influx which is controlled by the demand of immigration and increase in population in the Northwest.

The country practitioner should be, and, by virtue of the necessities of his environment, he is, a physician and a surgeon; and he does his duty as his conscience dictates, and does it well—better, far better, than it has ever been done before.

To discuss the accusation that "valuable lives are sacrificed to satisfy his criminal venality or ambition" is useless. The mass of the people know better than this, and their opportunities of observation are much better than those of the city editor. While not so wise on affairs in general, they keep a very close tab on the village doctor, and when you see them placing their lives in his hands, as they do every day all over this broad land of ours, you may be sure it is because they trust him. They have seen him tried and not found wanting.

Very respectfully yours,

R. J. SEWALL, M. D.

NEWS ITEMS

Dr. C. A. Boyd has moved from Lewiston to Northfield.

Dr. E. W. Gag, of Breckenridge, is doing post-graduate work in the East.

Dr. Harry O. Richey, of Deering, N. D., died last month at the age of 27.

The St. Benedictine Sisters will build a \$10,000 hospital at Beaudette.

Dr. F. O. Kaps, of Winfred, S. D., is doing post-graduate work in Chicago.

Dr. Isaac M. Burnside, of Highmore, S. D., is taking a special course in Chicago.

Dr. C. C. Campbell, State University, '05, has moved from Burtrum to Swanville.

Dr. W. H. Neumann, of Lewiston, was married last month to Miss Holt of Utica.

Dr. Wm. Judson, a recent State University graduate, has located at Gwinner, N. D.

Dr. W. A. Coventry, of Duluth, has been doing post-graduate work at Ann Arbor.

Dr. Vlademar Pleth, of Crookston, has gone to Europe, and will be absent several months.

Dr. J. P. Flynn, of Stillwater, has become a partner of Dr. F. B. Strauss, of Glen Ullin, N. D.

Dr. F. U. Davis, of St. Clair, who sold his practice some time ago, will locate in Faribault.

The new hospital at Worthington, under the charge of Dr. F. M. Manson, is now ready for work.

Dr. R. J. FitzGerald, of Minneapolis, died last month after a long illness contracted in the Philippines.

The city council of Faribault has leased the Hunter Hospital and will conduct it as a public hospital.

Dr. A. L. Hammerel, of Eveleth, has become resident physician of the State penitentiary at Stillwater.

Dr. Noble Jones, of Wilmot, S. D., has become instructor of internal medicine in the University of Oregon at Portland.

Dr. Henry O'Keefe, of Minto, N. D., has sold his practice, and will locate elsewhere, possibly in Grand Forks, N. D.

Dr. J. S. Richardson, of Perham, died in July. He was a pioneer physician, having been over fifteen years in Perham.

Drs. Arthur and Francis Peake, homeopathic physicians of Valley City, N. D., are planning to build a \$15,000 hospital.

Dr. Lee B. Greene, who has been connected with the N. P. Hospital at Brainerd for some time, has located in Monango.

The four societies of the First District, Dr. Hensel, Councilor, will hold a joint meeting on Wednesday, Sept. 27, at Moorhead.

The trustees of the Deaconess Hospital of Great Falls, Mont., will soon select the final plans for a new building to cost \$40,000.

Dr. E. G. Sasse has returned to Lidgerwood, N. D., and has repurchased the hospital of Dr. Shrodes, who will seek another location.

Dr. F. L. Mitchell, who has practiced several years at Artesian, S. D., has purchased the practice of Dr. Collie of Orient, in the same state.

Dr. F. H. Boyden, who has spent a year in St. Mary's Hospital, Rochester, has become the partner of Dr. B. T. Green, of Brookings, S. D.

Dr. Herbert W. Jones, of Minneapolis, left last week for Europe where he will remain several months in study, most of his time being spent in Vienna.

The physicians of Butte, Montana, want a new hospital, and one of their number has offered to contribute \$10,000 and another \$5,000 toward the enterprise.

Dr. A. C. Anderson, State University, '05, who has been practicing at Easton, has given up practice at that place and will probably move to California.

Dr. E. B. Payne, of Towner, N. D., died last month at the age of 62. He was the first physician in McHenry county, N. D., having located there in 1886.

Dr. J. D. Leath, of Canada, has purchased the practice of Dr. George Williamson, of Ardoch, N. D. Dr. Williamson will go to Europe next month for special study.

A chiropractic was fined \$50.00 last month at Aberdeen, S. D., for practicing medicine without a license. He was formerly a hardware clerk, and became a "Dr." in a few weeks.

Dr. A. J. McCannel, who has been practicing at Edmore, N. D., has returned from Washington, D. C., where he has been doing post-graduate work, and he will locate at Minot, N. D.

Dr. Granville P. Conn has retired as secretary of the New Hampshire State Medical Society, after thirty-seven years of continuous service in that capacity. A good record for the West to contemplate!

Dr. F. D. Patterson, who has been practicing for some time at Lancaster, has returned to his old field at Lambert. This leaves a good opening at Lancaster, which is situated in a good farming community.

Dr. B. W. Kelley, who gave up practice at Hickory three years ago on account of poor health, has resumed practice at Aitkin, having done post-graduate work at Ann Arbor and Chicago during his period of rest.

The Physicians Defense Co., of Fort Wayne, Ind., has won the suit instituted against it by the State of Minnesota which sought to bring it under the insurance laws. This was an agreed case, and Judge Kelley, of St. Paul, held for the Company.

The postponed monthly meeting of the Hennepin County Society will be held Monday, Sept. 17, in the library rooms of the Court House. Dr. Charles A. Reed will present a paper on the "Treatment of Clubfoot in Infants," and Dr. Emil Geist will open the discussion.

Dr. P. F. Kearney, State University, 1904, and Miss Mildred Kissack, a 1903 graduate of St. Barnabas Training School, were married in July. Dr. Kearney who has been associated for the past two years with Drs. Quain and Rainstad, of Bismarck, has located at Glen Ullin, N. D.

The Crow River Valley Society held its summer meeting at Lake Koronis last month, and increased the fame of their summer gatherings. The first thing to be done to this end was an excellent program, consisting of papers by Dr. Putney, of New Paynesville; Dr. Boehm, of St. Cloud; Dr. Bissel, of Maple Lake; Dr. Geist, of Minneapolis; and a clinic at Dr. Pilon's hospital. The social program followed, and "all difficulties of the American Medical Association were fixed up in a minute," but the difficulties of those present took a little longer time. Such meetings are worth while; and Drs. Johnson and Robertson, the president and secretary of the Society, and Drs. Pilon and Putney, who looked after the guests, are to be congratulated.

PHYSICIANS LICENSED AT THE APRIL, 1906, EXAMINATION TO PRACTICE IN MINNESOTA

We publish the list in this form at the request of the State Board of Medical Examiners, in order that the names may be pasted in the Official Register, copies of which are sent free by the Board to anyone who applies for same and remits five cents to pay the postage.

Bergroth, E. E. (R); Imp. Alex. U., Helsingfors, 1886; April, 1906 Hibbing.
 Burfiend, G. H. (R); Northwestern, Chicago, 1905; April 20, 1906 Stillwater.
 Busch, U. F. (R); Christiana, Norway, 1895; April 20, 1906 Pelican Rapids.
 Cady, Clinton C. (R); Drake U. Col. of Med., 1900; April, 1906 Harris, Iowa.
 Dale, J. R. (R); Col. of P. & S., Chicago, 1904; April 20, 1906 Hudson, Wis.
 Griffin, M. E. (R); Univ. of Minn., 1905; April 20, 1906 St. Paul.
 Gullixson, A. (R); Rush, 1902; April 20, 1906 Lake Mills, Iowa.
 Kean, M. D. (R); Univ. of Minn., 1890; April 20, 1906 Ishpeming, Mich.
 Lanoue, A. (R); Laval Univ., 1902; April 20, 1906 Mendota.
 Lynch, M. J. (R); Rush, 1905; April 20, 1906 Minneapolis.
 Mingo, F. E. (R); Hamline, 1905; April 20, 1906 Hamel.
 Morsman, C. F. (R); Omaha Med Col., 1902; April 20, 1906 Hibbing.
 Ratcliffe, J. J. (R); Rush, 1897; April 20, 1906 Ripple.
 Reid, G. C. (R); Baltimore Med. Col., 1902; April 20, 1906 Rochester.
 St. Denis, E. F. (R); Laval Univ., 1896; April 20, 1906 Bradley, Ill.
 Shelland, J. T. (R); Hamline, 1900; April 20, 1906 Ada.
 Wallen-Pleth, V. W. (R); Col. of P. & S., 1901; April 20, 1906 Crookston.
 Wightman, H. W. (R); Northwestern Univ., Chicago, 1901; April 20, 1906 Howard Lake.

LICENSED AT THE JUNE, 1906, EXAMINATION.

Abbott, W. P. (R); Univ. of Minn., 1906; June 22, 1906 St. Paul.
 Almklow, L. (R); Hamline, 1906; June 22, 1906 Cooperstown.
 Anderson, E. A. (R); Western Med. Col., 1905; June 22, 1906 Holdingford.
 Ashley, P. L. (R); Univ. of Minn., 1906; June 22, 1906 Virginia.
 Aspelund, S. J. (R); Univ. of Minn., 1906; June 22, 1906 North St. Paul.
 Barr, W. H. (R); Col. of P. & S., Chicago, 1905; June 22, 1906 Ledyard.
 Barrett, J. D. (R); Univ. of Minn., 1906; June 22, 1906 Chicago, Ill.
 Benepe, J. L. (R); Missouri Med. Col., 1887; June 22, 1906 Minneapolis.
 Bessessen, W. A. (R); Northwestern Univ., Chicago, 1905; June 22, 1906 Albert Lea.
 Brassett, A. (R); Hamline, 1906; June 22, 1906 Halstad.

Bray, E. R. (R); Univ. of Minn., 1906; June 22, 1906.....	St. Paul.
Brede, W. G. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Butturff, C. R. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Callerstrom, G. W. (R); Univ. of Minn., 1906; June 22, 1906.....	Gownie, Iowa.
Carlsen, E. L. (R); Univ. of Minn., 1906, June 22, 1906.....	Albert Lea.
Cheleen, S. J. (R); Univ. of Minn., 1906; June 22, 1906.....	St. Paul.
Christiansen, J. (R); Univ. of Iowa, 1905; June 22, 1906.....	Waterloo, Iowa.
Cooperthwaite, B. N. (R); Univ. of Minn., 1906; June 22, 1906.....	Ada.
DeBoer, H. (R); Nat. Med. Univ., Chicago, 1903; June 22, 1906.....	Cook Co. Ill.
Ehmke, W. C. (R); Hamline, 1906; June 22, 1906.....	LeSuer.
Froehlich, H. W. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Grover, F. L. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Hagen, O. J. (R); Univ. of Minn., 1906; June 22, 1906.....	Abercrombie.
Haney, C. L. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Hatch, M. A. (R); Bennett, Chicago, 1905; June 22, 1906.....	Illinois.
Hedding, J. A. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Henderson, M. S. (R); Univ. of Toronto, 1906; June 22, 1906.....	St. Paul.
Hoagland, C. C. (R); Northwestern, Chicago, 1906; June 22, 1906.....	Thief River Falls.
Hoepfer, G. E. (R); Bennett, Chicago, 1906; June 22, 1906.....	Mountain Lake.
Hilger, D. D. (R); Univ. of Minn., 1905; June 22, 1906.....	St. Paul.
Johnson, J. (R); Hamline, 1906; June 22, 1906.....	Sacred Heart.
Litchfield, J. T. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Lowe, L. M. (R); Col. of P. & S., Chicago, 1902; June 22, 1906.....	Farley, Iowa.
Lund, A. B. (R); Univ. of Minn., 1906; June 22, 1906.....	St. Paul.
McNalley, A. (R); Univ. of Toronto, 1905; June 22, 1906.....	Toronto.
Mellenthin, M. A. (R); Hamline, 1906; June 22, 1906.....	Sleepy Eye.
Metcalf, J. N. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Miller, H. W. (R); Univ. of Minn., 1906; June 22, 1906.....	Wapheton, N. D.
Monahan, E. S. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Moren, Edward, (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Moynihan, T. J. (R); Hamline, 1906; June 22, 1906.....	.....
Murphy, F. E. (R); Univ. of Iowa, 1905; June 22, 1906.....	Caledonia.
Nathan, P. V. (R); Univ. of Minn., 1906; June 22, 1906.....	Cokato.
Newkirk, Bertha G. (H); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Olsen, A. L. (R); Col. of P. & S., Chicago, 1906; June 22, 1906.....	Fisher.
Osburn, B. F. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Ostberg, N. W. (R); Barnes, 1901; June 22, 1906.....	Minneapolis.
Pederson, R. M. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Post, J. O. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Ridgway, Florence M. (R); Hamline, 1906; June 22, 1906.....	Minneapolis.
Roberts, K. R. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Rudell, G. L. (R); Univ. of Minn., 1906; June 22, 1906.....	St. Paul.
Schneider, J. P. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Smith, F. L. (R); Univ. of Minn., 1906; June 22, 1906.....	Duluth.
Smith, M. I. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Sterner, E. G. (R); Hamline, 1906; June 22, 1906.....	St. Paul.
Swezey, B. F. (R); Col. of P. & S., Keokuk, 1903; June 22, 1906.....	Decorah, Iowa.
Swinnerton, G. F. (R); Hamline, 1906; June 22, 1906.....	Caledonia.
Thompson, J. G. (R); Univ. of Minn., 1906; June 22, 1906.....	Albert Lea.
Trimbo, J. H. (R); Col. of P. & S., Keokuk, 1904; June 22, 1906.....	Runnells, Iowa.
Trooien, P. O. (R); Hamline, 1906; June 22, 1906.....	Hendricks.
Turnbull, J. (R); Queen's Univ., 1905, June 22, 1906.....	Richville.
Tyler, F. A. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Tyrrell, C. C. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Verne, V. E. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Vogel, C. A. (R); Am. Col. Med & Surgery, 1904; June 22, 1906.....	Elroy, Wis.
Witham, C. A. (R); Univ. of Minn., 1906; June 22, 1906.....	Minneapolis.
Worstell, G. (R); Columbian Univ., 1899; June 22, 1906.....	Knoxville, Iowa.
Wylie, A. R. T. (R); Univ. of Minn., 1906; June 22, 1906.....	Faribault.

REGULATIONS ADOPTED BY THE MINNESOTA STATE BOARD OF HEALTH

The following regulations, numbered from 1 to 126, inclusive, were duly adopted by the Minnesota State Board of Health at its regular meeting held July 10, 1906, under the provisions of Section 2131, Revised Laws of 1905; were published in the daily Pioneer Press, July 23, July 30, and Aug. 6, 1906.

Violations of these regulations are misdemeanors, and fines collected for violation thereof are paid into the state treasury. Section 2132, Revised Laws, 1905.

H. M. BRACKEN, M. D.
Secretary and Executive Officer.

REGULATIONS

The Control of Communicable Diseases

1. The local health officer shall forbid by notices posted upon the entrance to premises where a patient is sick with smallpox, scarlet fever, diphtheria, or epidemic cerebro-spinal meningitis, any person except the attending physician, health officer, sanitary inspector, or, in case of death, a licensed embalmer, from going to or leaving such premises without his permission, or the carrying of, or causing to be carried, any material whereby such disease may be conveyed, until after the disease has abated and the premises, dwelling and clothing have been rendered free from danger by means of such disinfection and cleansing as the State Board of Health may direct.

A quarantine card must give the name of the disease and the regulations set forth above.

2. The danger of transmitting scarlet fever and diphtheria by a second to a third person being slight when reasonable precautions are taken, the local health officer may permit those who do not have the direct care of the patient or patients to leave the premises in order to attend to their regular duties except when such individuals are associated with children away from the quarantined house. This applies to teachers or school children in the quarantined house and must exclude such from attending school—public, private, parochial or church—while their home is under quarantine. The patient or patients, and those having charge of same, must be under rigid quarantine, as directed in Regulation 1.

3. No person, or persons, shall alter, deface, remove, destroy or tear down any quarantine card posted by a local health officer. The occupant or person having possession or control of a building upon which a quarantine notice has been placed shall within twenty-four (24) hours after the destruction or removal of such notice by other than the proper sanitary officials, notify the sanitary official of the district of such destruction or removal. The fact of the alteration, destruction or removal of any such notice shall be prima facie evidence that such notice was altered, destroyed, or removed, as the case may be, by the occupant or person having possession and control of the house or building upon which such notice was placed or posted.

4. Any person who is infected with smallpox, scarlet fever or diphtheria, and who is residing in a common lodging house, boarding house or hotel, shall be removed therefrom under the supervision of the local health officer to a suitable hospital or place of quarantine. If an infected person cannot be removed without danger to his health, the local board of health shall make provision for the care of such individual in the house where he may be found, and may cause other persons in the house to be removed therefrom after having been submitted to the necessary disinfection.

5. Whenever a local health officer is informed or has reason to suspect that there is a case of smallpox, scarlet fever, diphtheria, epidemic cerebro-spinal meningitis, measles, typhoid fever or tuberculosis within the territory over which he has jurisdiction, he shall immediately examine into the facts of the case and shall adopt the quarantine or employ the sanitary measures directed by the Minnesota State Board of Health in dealing with such case or cases, and shall immediately notify the secretary of said State Board of Health of the appearance of such disease and the measures taken in relation thereto. A report of each case as it occurs shall be made to the aforesaid secretary by the local health officer.

6. The local health officer shall see 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, is carried out before the same is released from quarantine.

7. When furniture, bedding, clothing, carpets, or other articles that have been exposed to infection through contact with infected persons or articles cannot be disinfected, the same may be destroyed by order of the local board of health at the expense of the municipality.

8. No person shall let for hire, or cause or permit any one to occupy, apartments previously occupied by a person ill with smallpox, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, measles, typhoid fever or tuberculosis until such apartments shall have been disinfected under the supervision of the local health officer according to the instructions of the Minnesota State Board of Health.

9. Whenever the order or direction of the local health officer requiring the disinfection of articles, premises or apartments shall not be complied with, the local health officer shall forthwith cause a placard, in word and form as follows, to be placed upon the door of the apartments or premises:

NOTICE

....., Minn.
..... is a communicable disease. These apartments have been occupied by a patient and may have become infected. They must not be again occupied until my orders directing the renovation and disinfection of same have been complied with.

This notice must not be removed, under penalty of the law, except by an authorized health official.

.....,
Local Health Officer.

Dated, 190..

10. No person shall work or be permitted in or about any establishment for the manufacture of food products during the time in which a case of smallpox, scarlet fever or diphtheria exists in the house in which he or she resides, until the local health officer has given such person a written certificate to the effect that no danger to the public will result from his or her employment in such establishment.

Smallpox

11. The local health officer having knowledge of or having reason to suspect the existence of smallpox shall investigate, if necessary, and shall at once place under quarantine all smallpox patients and those having the care of or coming in contact with such patients, except the attending physician, health officer, sanitary inspector, or, in case of death, a licensed embalmer.

The quarantine period for smallpox shall not be less than four weeks and may be longer. Quarantine must not be released until the health officer has satisfied himself that there is no further danger of infection from the patient. The quarantine must not be raised until four weeks or more, as the case may be, after the appearance of the last case in such a family or household.

12. The local health officer shall keep all unvaccinated people known to have been exposed to a case of smallpox under strict supervision for a period of three weeks from the date of last exposure. Non-vaccinated individuals in a house quarantined for smallpox shall be kept under quarantine for a period of two weeks beyond that required for the last smallpox case, and after the disinfection of the house.

13. Individuals found in a house with a smallpox patient and who show evidence of a recent successful vaccination, or will submit to vaccination within forty-eight (48) hours after first exposure, may be released from quarantine after a thorough disinfection of their person and clothing. Such individuals must not be permitted to return to the quarantined house.

14. The apartments occupied by a smallpox patient shall be deemed infected, and when vacated by death or removal of the patient from quarantine with their contents, be thoroughly disinfected under the supervision of the local health officer. All persons having occupied such apartments during the quarantine period must have their clothing disinfected and take a disinfecting bath before being released from quarantine. All disinfection prescribed in this regulation shall be a part of the control of the disease.

15. No milk, butter or other dairy product shall be sold or given to any party, or delivered at any creamery or butter factory, from a house quarantined because of the presence of smallpox therein.

16. Every physician shall immediately report to the local health officer, in writing, the name of every patient under his care having smallpox, the state of his or her disease, and his or her place of dwelling. A report must be made for each case as it occurs in a family or household.

17. Every physician shall report, in writing, to the local health officer the death of any smallpox patient under his care, within twelve (12) hours thereafter.

18. The local health officer of any city village or township must report immediately,

to the secretary of the Minnesota State Board of Health all cases of smallpox occurring within his jurisdiction.

(Note carefully Regulations 1 to 9 inclusive.)

Scarlet Fever

SCARLATINA, SCARLET RASH

19. The local health officer having knowledge of or having reason to suspect the existence of scarlet fever shall investigate, if necessary, and shall at once place under quarantine all scarlet fever patients and those having the care of or coming in contact with such patients, except the attending physician, health officer, sanitary inspector, or, in case of death, a licensed embalmer.

The quarantine period for scarlet fever shall not be less than three weeks and may be longer. Quarantine must not be released until the health officer has satisfied himself that desquamation (or peeling) is completed and that there is no further danger of infection from the patient. The quarantine must not be raised until three weeks or more, as the case may be, after the appearance of the last case in such family or household. (See Regulation 2.)

20. The apartments occupied by a scarlet fever patient shall be deemed infected, and when vacated by death or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of the local health officer. All persons having occupied such apartments during the quarantine period must have their clothing disinfected and take a disinfecting bath before being released from quarantine. All disinfection prescribed in this regulation shall be a part of the control of the disease.

21. No milk, butter or other dairy product shall be sold or given to any party, or delivered at any creamery or butter factory, from a house quarantined because of the presence of scarlet fever therein.

22. Every physician shall immediately report to the local health officer, in writing, the name of every patient under his care having scarlet fever, the state of his or her disease, and his or her place of dwelling. A report must be made for each case as it occurs in a family or household.

23. Every physician shall report, in writing, to the local health officer the death of any scarlet fever patient under his care, within twelve (12) hours thereafter.

24. The local health officer of any city, village or township must report immediately to the secretary of the Minnesota State Board of

Health all cases of scarlet fever occurring within his jurisdiction.

(Note carefully regulations 1 to 9 inclusive.)

Diphtheria

25. The local health officer having knowledge of or having reason to suspect the existence of diphtheria shall, personally or through the attending physician, immediately secure a culture from the nose and throat of the suspected individual and submit the same to the laboratory of the State Board of Health for examination. A suspicious case must be quarantined as diphtheria until the diagnosis is confirmed or denied by the laboratory findings. An undoubted clinical case of diphtheria must be quarantined even with negative findings from the first laboratory examination.

Cultures may be submitted to municipal or private laboratories if the same have the endorsement of the Minnesota State Board of Health.

26. The quarantine of diphtheria in cities and villages, and for country districts within two miles of a city or village, shall be continued until a negative report has been made from the laboratory of the Minnesota State Board of Health or a laboratory approved by said Board, on cultures taken by a physician from nose and throat of the person quarantined, followed by a negative report on cultures taken from nose and throat not less than twenty-four (24) hours thereafter, so as to constitute two successive reports on cultures from both nose and throat; provided that the quarantine shall in no instance be continued for a longer period than six weeks from the date of the disappearance of all clinical symptoms of the disease.

In the event of a school teacher or pupil being released from quarantine without two successive negative reports from a laboratory approved by the Minnesota State Board of Health such individual must not attend any public, private, parochial, church or Sunday school, or any other public gathering, until two successive negative reports have been made.

Teachers or children in country districts must be excluded from schools until two successive negative reports have been made upon cultures taken after the end of the time quarantine period. Such patients in country districts may be taken at the end of the time quarantine period to a physician in order that cultures may be secured and submitted to the State Board of Health laboratory for examination. (See Regulation 2.)

27. The quarantine of diphtheria in public institutions where the population is resident shall be governed entirely by laboratory examinations. Immediately after the appearance of diphtheria in an institution the local health officer shall notify the secretary of the State Board of Health, who shall supply facilities for taking cultures, if necessary, from all residents of the institution. All individuals, whether sick or well, who are found in the institution harboring diphtheria bacilli shall be quarantined until a negative report is made upon both nose and throat cultures. They shall then be properly cleansed and disinfected and placed in other detention quarters until two later and successive negative reports on double examinations of nose and throat are made, whereupon they may be released after proper disinfection.

28. After the laboratory diagnosis of diphtheria has been made the local health officer in cities and villages, and for country districts within two miles of a city or village, shall forward specimens from both nose and throat of the patient at least once every week after the clinical symptoms have subsided, until two negative reports have been made as prescribed in Regulation 25.

29. The apartments occupied by a diphtheria patient shall be deemed infected, and when vacated by death or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of the local health officer. All persons having occupied such apartments during the quarantine period must have their clothing disinfected and take a disinfecting bath before being released from quarantine. All disinfection prescribed in this regulation shall be a part of the control of the disease.

30. No milk, butter or other dairy product shall be sold or given to any party, or delivered at any creamery or butter factory, from a house quarantined because of the presence of diphtheria therein.

31. Every physician shall immediately report, in writing, to the local health officer the name of every patient under his care having diphtheria, the state of his or her disease, and his or her place of dwelling. A report must be made for each case as it occurs in a family or household.

32. Every physician shall report, in writing, to the local health officer the death of any diphtheria patient under his care, within twelve (12) hours thereafter.

33. The local health officer of any city, village or township must report immediately to the secretary of the Minnesota State Board of

Health all cases of diphtheria occurring within his jurisdiction.

(Note carefully Regulations 1 to 9 inclusive.)

Measles

34. The local health officer having knowledge of or having reason to suspect the existence of measles shall investigate, if necessary, and shall at once placard the house in which the disease exists. The placard must give the name of the disease and state that children in the house will not be allowed to leave the premises. The placard must be kept on the house until at least ten days after the appearance of the disease in the last case in such family or household. (See Regulation 3.)

35. Every physician shall immediately report, in writing, to the local health officer the name of every patient under his care having measles, the state of his or her disease, and his or her place of dwelling. A report must be made for each case as it occurs in a family or household.

36. Every physician shall report, in writing, to the local health officer the death of any measles patient under his care, within twelve (12) hours thereafter.

37. The local health officer of any city, village or township must report immediately to the secretary of the Minnesota State Board of Health all cases of measles occurring within his jurisdiction.

(Note carefully Regulations 6 to 9 inclusive.)

Human Tuberculosis

38. Every physician engaged in the practice of medicine in the state of Minnesota shall submit to the secretary of the State Board of Health the full name, specific residence and hygienic data, on blanks furnished by said Board for that purpose, of every person under his treatment for tuberculosis, within one week after the application of such patient for treatment.

Physicians in cities and villages where they are required by ordinance or sanitary regulation to report their tubercular cases to the local board of health will not be required to report such cases directly to the State Board of Health, provided the local health officer makes returns of all such cases reported to him to the State Board of Health once a month on blanks furnished for that purpose by said board.

39. The secretary of the Minnesota State Board of Health shall keep a careful and accurate record of all cases of tuberculosis reported to him. The same shall not be for publication, but may be used by said board in the discharge of its duties.

40. Immediately after being notified of any case of tuberculosis, the secretary of the Minnesota State Board of Health, or the local health officer, shall send to the attending physician the printed matter published by the State Board of Health relative to the control of tuberculosis. Such physician shall thereupon deliver the same to those in charge of the patient.

41. No person affected with tuberculosis shall so dispose of the sputum or other infectious bodily secretion or excretion as to cause offense or danger to any person or persons.

42. Any health officer receiving a complaint to the effect that the foregoing rule is being violated shall investigate the same, and if it appears that the violation complained of is such as to cause offense or danger to any person occupying the same room, apartment, house or part of house, he shall serve notice upon the person so complained of, reciting the alleged cause of offense or danger, and requiring him or her to dispose of the sputum, or other infectious bodily secretion or excretion, in such a manner as to remove all reasonable cause of offense or danger.

43. The apartments occupied by any tuberculous patient shall be deemed infected, and when vacated by death or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of the local health officer. All disinfection prescribed in this rule shall be a part of the control of the disease.

44. It shall be the duty of any person having knowledge of the facts to notify the local health officer within twenty-four (24) hours after the death or removal of a person affected with tuberculosis from any apartments.

(Note carefully Regulations 8 and 9.)

Typhoid Fever

45. Every physician engaged in the practice of medicine in the state of Minnesota shall submit to the secretary of the State Board of Health the full name, specific residence and hygienic data, on blanks furnished by said Board for that purpose, of every person under his treatment for typhoid fever or suspected typhoid fever, within one week after the application of such patient for treatment.

Physicians in cities and villages where they are required by ordinance or sanitary regulation to report typhoid fever cases to the local board of health will not be required to report such cases directly to the State Board of Health, provided the local health officer makes returns of all cases reported to him to the State Board of Health once a month on blanks furnished for that purpose by said board.

46. The secretary of the Minnesota State Board of Health shall keep a careful and accurate record of all reported cases of typhoid fever. The same shall not be for publication, but may be used by said Board in the discharge of its duties.

47. Immediately after being notified of any case of typhoid fever, the secretary of the Minnesota State Board of Health, or the local health officer, shall send to the address of the attending physician the printed matter published by the State Board of Health relative to the control of typhoid fever. Such physician shall thereupon deliver the same to those in charge of the patient.

48. No person affected with typhoid fever, or in charge of a typhoid fever patient, shall so dispose of the excreta or other infectious bodily secretion or excretion as to cause offense or danger to any other person or persons.

49. Any health officer receiving a complaint that the foregoing rule is being violated shall investigate the same, and if it appears that the violation complained of is such as to cause offense or danger to any person he shall serve notice upon the offending party, reciting the alleged cause of offense or danger and requiring that the bodily secretions or excretions complained of be disposed of in such a manner as to remove all reasonable cause of offense or danger.

50. It shall be the duty of those having charge of a typhoid fever patient or patients to see to it that the excreta, or other infectious bodily secretions or excretions, from such patients are properly disinfected.

51. The apartments occupied by any typhoid fever patient shall be deemed infected, and when vacated by death or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of the local health officer. All disinfection prescribed in this rule shall be a part of the control of the disease.

52. It shall be the duty of any person having knowledge of the facts to notify the local health officer within twenty-four (24) hours after the death or removal of a person affected with typhoid fever, from any apartments.

53. Whenever typhoid fever prevails in a locality the local board of health shall immediately appoint a competent inspector, or inspectors, to patrol the city, village or district involved. Such inspector or inspectors shall report to the local board of health all water-closets, privies, vaults and cesspools which are not fly-proof, with screened doors and windows; and all vaults and cesspools which are not water-tight, dark and fly-proof. The local board of health shall thereupon enter its proper order in the premises to the end that all such water closets and privies

shall be made fly-proof and all such vaults and cesspools water-tight, dark and fly-proof.

54. Any drinking water supply shown to be a positive or probable source of disease shall be condemned either by the local board of health or by the Minnesota State Board of Health, and when so condemned, shall not be used again as a drinking water supply until declared safe by the condemning party.

(Note carefully Regulations 6 and 9).

Rabies

55. When an animal suspected of having rabies has bitten a human being the fact should be immediately reported to the local health officer, who shall secure, or cause to be secured, such animal alive and without injury if possible. The animal shall be confined in a safe, quiet, roomy and comfortable place, and a report giving full particulars concerning the action taken sent to the secretary of the State Board of Health at the laboratories of the Board, Minneapolis. This report shall include the name of the locality in which the biting occurred (city, village or township), the date of biting, the name, residence and address of the owner of the animal; the full name or names of the persons bitten, together with place of residence; the names, addresses and residences of all owners of animals which have been bitten by the animal in question, together with a list and description of the animals bitten and the disposition made of same.

Such supposedly rabid animal must be kept under careful observation by the local health officer for at least ninety (90) days, or killed.

56. When such suspected animal is killed, care must be taken not to injure the brain or spinal cord. The head and several inches of the neck of the animal must be cut off and sent to the Director of the laboratories specified in Regulation 55. The preparation and shipment of the head must be as directed in the circular on rabies issued by the Board.

57. All persons bitten by an animal suspected of having rabies should be sent at once to a Pasteur Institute. The Minnesota State Board of Health will advise as to where reliable Pasteur Institutes are located.

Vital Statistics

58. Any physician having attended a person during his or her last illness shall within ten (10) days after the decease of such person furnish for registration to the respective local health officer in cities and villages, or to the township clerk in townships, wherein the death occurred, a certificate giving the name of the deceased, the dura-

tion of the last illness, the cause of death, the date of death, and such other information as is required on the blank furnished for the return of a death by the Minnesota State Board of Health.

59. Any physician or midwife having attended a case of confinement shall within ten (10) days thereafter furnish for registration to the local health officer in cities and villages, or to the township clerk in townships, wherein a birth occurred, a certificate giving the place of birth, date of birth, name of child, sex, and color, and such other information as is required on the blanks furnished for the return of a birth by the Minnesota State Board of Health.

60. Parents shall give notice to the local health officer in cities and villages, or to the township clerk in townships, wherein they reside, of the birth of a child or a death in the family whenever no physician or midwife, as the case may be, was in attendance. The keeper, or other proper officer, of every workhouse, poorhouse, reform school, jail, prison, hospital, asylum, lying-in house, or other public or charitable institution, shall give notice of every birth or death happening among the persons under his charge to the local health officer in cities and villages, or to the township clerk in townships, wherein the birth or death occurred. Coroners shall report the deaths of all cases coming under their jurisdiction to the local health officer in cities and villages, or to the township clerk in townships, wherein the death occurred. These reports must be made upon blanks furnished for that purpose by the Minnesota State Board of Health, giving the information, so far as possible, asked for on the blank.

61. Local health officers in cities and villages, and township clerks in townships, throughout the State of Minnesota shall, on or before the 5th day of each month, transmit to the secretary of the State Board of Health, upon blanks furnished by said Board for that purpose, a certified copy of the registry of births and deaths as the same appears in their offices, and which have occurred within their jurisdiction during the calendar month next preceding.

62. Embalmers must report to the Minnesota State Board of Health on the first of each month, upon blanks furnished them for that purpose, the sale of each coffin or casket made by them, giving the name of the deceased, residence, place of death, cause of death, name of the attending physician at time of death, and such other information as is required on the blanks furnished. If the residence of the deceased at the time of death was in the country, the place of residence must be given by township.

County Boards of Health

63. The several county health officers shall make quarterly reports to the Minnesota State Board of Health as to the general sanitary condition of their counties, such reports bearing especially upon matters relating to communicable diseases. Especial attention must be given to the reporting of rabies and glanders.

64. The several county health officers shall keep close watch over apparent epidemic or endemic diseases existing within their jurisdiction, and if a question arises as to the proper care of such diseases, they shall notify the secretary of the State Board of Health in order that an investigation may be made.

65. If a county health officer has knowledge or a reasonable belief that the returns of births and deaths for his county are not being made as required by law, he shall immediately report such fact or suspicion to the secretary of the State Board of Health.

66. The several county health officers shall note the condition of slaughter houses, rendering establishments, starch factories and paper mills within their jurisdiction, and shall report such conditions to the secretary of the State Board of Health from time to time, as necessary, or upon the request of said secretary.

67. County boards of health shall at all times bring to the attention of the secretary of the State Board of Health any conditions which they may deem in need of sanitary regulation.

68. The county health officers shall assemble at the call of the Minnesota State Board of Health once a year to discuss general sanitary problems and to present at such conferences the special sanitary needs of their individual districts.

69. County health officers shall make such investigations and reports, and obey such directions relating to sanitary problems, as shall be prescribed from time to time by the State Board of Health.

70. Upon the application of not less than five (5) county health officers, the State Board of Health shall call a special conference to discuss especial or local sanitary problems, the time and place of meeting to be determined by the State Board of Health.

Protecting the Health of School Children

71. The local board of health of every city, village and township in Minnesota shall appoint one or more school physicians, shall assign a school physician to every school within the city,

village or township, shall provide him with all necessary blanks and proper facilities for the performance of his duties and shall require him to call at such intervals as may be prescribed by the local board of health, or whenever notified so to do by the head of the school, at the school building or buildings under his jurisdiction; except that, in the case of schools in remote and isolated situations, the local board of health may, after consultation with the State Board of Health, make such other arrangement as may best carry out the purpose of this regulation.

72. Each school physician shall make a medical examination of all school children referred to him for that purpose, and such examination of pupils, teachers and janitors, and of school buildings as in his opinion the protection of the health of the public may require, and shall report the results of such examinations to the State Board of Health.

73. The local board of health of every city and village shall require every teacher to report each morning to the head of the school the case of every child belonging in his or her room who shows signs of being in ill health or suffering from a communicable disease; also every child returning to school after absence on account of illness of unknown cause. The head of the school, upon receiving such report, shall as soon as possible thereafter notify the school physician and refer to him all such cases for examination. Whenever, in the opinion of the head of the school, a child's condition requires that he or she be sent home, and whenever a child shows symptoms of smallpox, scarlet fever, diphtheria, measles, chicken-pox, tuberculosis, influenza, tonsillitis, erysipelas, whooping cough, mumps, itch, ringworm, or trachoma, he or she shall send such suspect home immediately, or as soon as a safe and proper conveyance can be found, and the local health officer shall be notified at once by the head of the school of such case.

74. In the event of any school child having smallpox, or having been exposed to the disease while in attendance at school, the building where such child is in attendance shall be closed by the order of the local health officer and kept closed until the place has been thoroughly disinfected and cleansed under the supervision of said health officer.

In the event of the Board of Education having passed a regulation requiring vaccination of all teachers and pupils, the school may be opened after the above disinfection and cleansing; otherwise the school shall be kept closed until the local board of health, with the approval of the State Board of Health, directs otherwise.

75. 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 such child or minor having smallpox, scarlet fever, diphtheria, measles, chicken-pox, tuberculosis, influenza, tonsillitis, erysipelas, whooping cough, mumps, itch, ringworm, or trachoma, or any other dangerous communicable disease, or any child residing in any house in which any such disease exists or has recently existed, to attend any public, private, parochial, church or Sunday school until the local health officer of the city, village or township shall have given his permission for such attendance.

76. A school house wherein a child suffering from smallpox, scarlet fever or diphtheria has been present shall be deemed infected and must be temporarily closed and thoroughly disinfected and cleaned under the supervision of the local health officer before the reopening of the school. Such disinfection and cleaning shall be done according to the direction of the Minnesota State Board of Health in its circular on disinfection.

77. All school houses shall be inspected from time to time by the local health officer, and if found to be in an unclean or unsanitary condition, said health officer shall forthwith order that the place be closed and kept closed until it has been properly cleaned or disinfected, or both, as the case may require.

78. The local board of health of every city and village shall cause every child in the public schools to be separately and carefully tested and examined at least once in every school year in order to ascertain whether he or she is suffering from defective sight or hearing, or from any other disability or defect tending to prevent his or her receiving the full benefit of the school work, or requiring a modification of the school work in order to prevent injury to the child or to secure the best educational results for such child. Tests of sight and hearing shall be made by teachers and reported to the Minnesota State Board of Health by the head of the school. The head of the school shall cause notice of any defect or disability in any child requiring treatment to be sent to the parent or guardian of the child.

79. The Minnesota State Board of Health shall prescribe and furnish to the superintendents of schools suitable rules of instruction, test cards, blanks, records and other appliances for carrying out the above regulations. The several Normal Boards of the state shall provide for pupils in the Normal Schools the instruction and practice prescribed by the State Board of Health for testing the sight and hearing of school children.

Diseased Eyes Among Infants

80. 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, parent or other person having charge of such infant, to report the facts of such affection in writing to the local health officer of the city, village or township in which the person having charge of said infant resides, within twelve (12) hours after ascertaining the fact.

81. Any health officer to whom may have been reported any case of eye disease in a child under two months of age shall forthwith visit said child and provide immediate medical treatment unless said child is already under the charge of a competent medical practitioner.

Relating to the Welfare of Infants

82. All lying-in houses shall be licensed and the local health officer of any city, village or township shall inspect those within his jurisdiction and satisfy himself that they are properly licensed and conducted.

83. All boarding places for infants shall be licensed and the local health officer of any city, village or township shall inspect those within his jurisdiction and shall satisfy himself that they are properly licensed and conducted.

84. The local health officer shall be entitled to a fee of two (2) dollars for making the necessary inspection and issuing the licenses provided for under Regulations 82 and 83. A license shall expire on the first day of January following its issuance. It may be renewed, after reinspection, upon the payment of a renewal fee of two (2) dollars. Such renewal shall hold for one year. The license and renewal fees shall be paid by the party licensed.

85. Each health officer issuing a license as provided for above shall file a copy of the same with the secretary of the Minnesota State Board of Health within ten (10) days after its issuance. Such license shall contain the certificate of the health officer to the effect that he has personal knowledge of the applicant, and that said applicant is of good moral character. The license shall also contain a description of the premises to be occupied as a lying-in house or boarding place for infants. No license shall be issued unless the premises and furnishings are in proper sanitary condition. A license issued permitting the operation of a boarding place for infants must state that the applicant for same is competent to take care of children under two years of age, and must also state the number of chil-

children which may be received at any one time.

86. Physicians and midwives licensed to practice in the State of Minnesota may be licensed to receive into their premises persons to be cared for during childbirth, upon the payment of a license fee and renewals as provided for under Regulation 84.

87. The birth of a child in a lying-in house or in the home of a physician or midwife must be reported to the health officer by the person in charge within three (3) days, giving the date of birth, sex, and name of child, together with the names, nationality and residence of the parents, if known, and such other information as may be required in the reporting of births.

88. All parties receiving children as provided for under Regulation 83 shall within three (3) days after the reception of each child report to the licensing health officer the name and age of the child and the name and place of residence of the person placing the child in such institution.

89. The health officer issuing a license may at any time enter upon the premises licensed and inspect the same, and may at any time, upon proof satisfactory to him that such premises are unfit or such person improper to continue in such business, revoke the license.

90. The officers of an incorporated society for the prevention of cruelty to children may at all reasonable times enter and inspect the premises where such children are received, boarded or kept, and see that the provisions of these regulations are duly enforced.

91. The secretary of the Minnesota State Board of Health, or other representative of said Board duly delegated may at all reasonable times enter and inspect the premises where children are received, boarded or kept, and also has authority to inspect the children as to their physical condition.

92. No person shall offer, either by advertisement in the public press or in any other way, to dispose of the child of another as an inducement for any one to come to their premises during confinement in childbirth or to place a child in a boarding house of the type and character described in the foregoing regulations.

Disposal of the Dead

93. Only licensed embalmers shall be permitted to take charge of the remains of one who has died of smallpox, scarlet fever, diphtheria or other dangerous communicable disease. Such remains must be properly disinfected and enclosed in a tightly sealed coffin which shall not thereafter be opened. The funeral of such person shall be strictly private, and in the removal of the remains for burial or other purposes only

such a vehicle shall be employed as is authorized by the local health officer.

94. The dead body of any human being must not remain unburied for a longer period than four days unless the same is to be shipped, in which event shipment must begin within this time. When death is due to any of the diseases specified in Regulation 93 the body must not remain unburied more than twenty-four (24) hours unless prepared for shipment as provided for under the transportation regulations.

95. No embalming fluid containing arsenic or mercury shall be used in Minnesota in the embalming of dead human bodies for burial.

96. All shipping permits issued in Minnesota for the transportation of the remains of the dead must be signed by a licensed embalmer. A firm name must not be used in the signing of such permits unless all members of the firm are licensed embalmers.

97. The shipment of the dead must be governed by the transportation regulations printed on the shipping blanks furnished by the Minnesota State Board of Health.

Embalmers

98. Every funeral director or embalmer who may wish to qualify as competent to prepare the remains of the dead for burial or transportation as provided for under the laws of Minnesota (Chapter 101, 1905), shall comply with the following requirements:

He shall make application to the Minnesota State Board of Health for a license. Such application shall contain the name of applicant in full, age, place of residence, and certificates from two registered physicians of good repute as to his or her general standing.

The applicant must be able to pass an examination prescribed by the Minnesota State Board of Health in

- (1) Visceral anatomy of the human body;
- (2) The methods of embalming;
- (3) Infection and disinfection;
- (4) The elements of bacteriology;
- (5) The action and comparative value of germicides;
- (6) The proper use of embalming fluids;
- (7) The precautions necessary after embalming in order to make safe for transportation the remains of those who have died of a communicable disease;
- (8) Such other topics as the State Board of Health may from time to time designate.

99. The remains of the dead must be prepared for burial or shipment by a licensed embalmer.

100. Railroad officials and employees

throughout the State of Minnesota must not receive for shipment the remains of any dead person unless the same have been prepared by a licensed embalmer.

Certified Milk

101. All milk sold in Minnesota as certified milk must be free from pus and injurious bacteria and must not contain more than 10,000 bacteria of any kind to the cubic centimetre at the time of delivery to consumers. Such milk must have a specific gravity ranging from 1,029 to 1,034, and must be neutral or at most but faintly acid in reaction, must contain not less than 3.5 to 4.5 per cent proteids, from 3.5 to 4.5 per cent butter fat, and from 4 to 5 per cent sugar. It must be free from all contaminating foreign matter or chemical substances added for preservative or coloring purposes. Immediately after milking, the milk must be cooled and thereafter kept at a temperature below 50 degrees F. until delivered to consumers.

102. The dairy herds supplying certified milk must be under rigid veterinary supervision approved by the Minnesota State Board of Health. Such milk must be taken only from cows that have been shown by clinical examination and the tuberculin test to be free from tuberculosis. The cows must also be free from all other diseases.

103. All employees in and about a dairy producing certified milk must be free from any communicable disease such as smallpox, scarlet fever, diphtheria, typhoid fever, tuberculosis, syphilis, etc.

Offensive Trades or Business

104. No tannery, slaughter house, butcher shop, creamery, feeding yards for stock, livery or boarding stable, rendering establishment, or other offensive trade or business, shall be located in any city, village or township in Minnesota without having first secured a permit for such location from the local board of health. Such permit shall designate the place where said trade or business may be carried on.

Rendering Establishments

105. No person shall produce, manufacture or convert into any article of commerce, by any process, in any room where any article of human food is produced, manufactured or handled, any part of an animal carcass slaughtered when not in good health, or any butcher's offal as the same is defined in Regulation 106, or any decaying or unwholesome animal matter.

106. Butcher's offal, for the purpose of these rules and regulations, is defined to be all meat, tallow, fat, fish, and all scraps and odds and ends of the same, and all bones which have become

in any degree decayed or unwholesome, or which have been put into any unclean receptacle or in contact with any tainted article of any kind.

107. Any person desiring to produce, manufacture or convert into any article of commerce other than human food any part of an animal carcass slaughtered when not in good health, or any butcher's offal, or any decaying or unwholesome animal matter, shall apply to the Minnesota State Board of Health for a license so to do. In his application for such a license he shall specifically describe and locate his proposed place of business and shall name each and every article he proposes to produce or manufacture, and shall specify all the animal materials to be used by him in the contemplated business.

108. The Minnesota State Board of Health, through an officer or a properly authorized agent, shall inspect the location of the proposed business, and if it is a suitable place properly equipped in a room or building wherein no article of human food is produced, manufactured or handled, then upon the payment of a license fee of ten (10) dollars, said Board of Health shall issue a license to the applicant permitting him to produce or manufacture at such location the articles specified in his application, for such length of time as he shall not in any way violate the conditions of his license or any provision of these rules. Such license shall expire on the 31st day of July following its issuance. It may be renewed, after re-inspection, upon the payment of a renewal fee of five (5) dollars. Such renewal shall hold for one year. The license shall thereafter be renewed from time to time upon the same terms and conditions as governed the issuance of the first license.

Slaughter Houses and Meat Inspection

The location of slaughter houses is provided for under Regulation 104.

109. All slaughter houses must have an abundant supply of water from a well or other source which is not contaminated. This water must be applied with adequate pressure through a hose to all parts of the room or rooms used for the purpose of slaughtering or preparing meats for consumption as human food.

110. All slaughter houses must have suitable water-tight floors and proper subdrainage. The floors must be thoroughly washed each day after the slaughtering is completed.

111. The walls and all exposed surfaces on the inside of a slaughter house must be cleaned by washing or scraping as often as necessary in order to keep the premises in proper sanitary condition. If the walls are not painted they must be calcimined or whitewashed at least once a month.

Painted walls must be repainted at least once a year.

112. All offal and refuse must be removed from the slaughter house on the day of slaughtering and disposed of in a sanitary manner. The feeding of hogs or other animals on offal from or at a slaughter house is absolutely forbidden.

113. All animals kept in yards near the slaughter house must be treated in a humane manner, and if kept over twelve (12) hours must be properly fed. The animals must be watered frequently. All pens and enclosures connected with any slaughter house must be kept in a sanitary condition.

114. No slaughtering shall be done in barns, sheds, shipping pens or other buildings not designed or suitable for the slaughtering of animals and the handling, dressing and cooling of meats; nor shall any slaughtering be done outside of any building except in rural districts and for private consumption.

Cooling and storage rooms for meats must be properly ventilated.

115. No person shall sell, or offer for sale, any part of any animal carcass slaughtered when not in good health, nor any decaying or unwholesome animal matter, nor any article in which there has been used to any extent whatever any meat as described, with the intent that the same may be used as human food.

116. The local health officer, or a duly appointed inspector, in each city, village or township in the State of Minnesota, shall be an inspector of animals and meat supplies intended for human consumption within his jurisdiction. The markets and places where meat intended for consumption as human food is kept or offered for sale within such city, village or township, the vehicle in which meat is transported, or from which same is sold, offered for sale, or disposed of for said purpose, and the slaughter houses wherein animals intended to be used for human food are slaughtered, must be kept clean at all times.

117. No person or persons shall sell, or offer for sale, in any city, village or township in Minnesota having an inspector of meats as provided for above, any meat intended for human consumption, whether slaughtered within such district or elsewhere, unless the same has first been inspected and approved by the local health officer or a duly licensed inspector of said city, village or township.

Garbage Feeding

118. The collection of garbage in cities and villages in Minnesota must be carried on in water-tight receptacles with closed tops. Householders whose garbage is to be collected under

the supervision of a city or village board of health must provide covered water-tight cans or containers of such size and form as to permit of their being emptied into the collecting receptacle by one man.

119. Garbage collected in cities and villages in Minnesota, to be used as food for hogs, cattle or other animals, must not be more than forty-eight (48) hours old at time of feeding.

120. Garbage used for feeding as provided for under Regulation 119 must be kept in water-tight boxes or cans under cover and protected from the weather. These garbage receptacles must be scalded at least twice a week during the time from April 1st to October 1st, and once a week during the rest of the year, in a manner satisfactory to the local health officer or a representative of the Minnesota State Board of Health.

121. Garbage collected in cities and villages in Minnesota and fed to hogs, cattle or other animals must be fed on or over water-tight floors built at least one foot above the ground, with water-tight sides to a height of one foot above the floor. Pens and floors constructed as a place for feeding of garbage must be approved as to their construction by the local health officer or a representative of the Minnesota State Board of Health.

122. The word "garbage" as used in the preceding regulations shall be construed to refer to the accumulation of animal or vegetable matter from kitchens, pantries, dining rooms or other parts of hotels, restaurants, boarding houses, tenement houses, dwelling houses, public institutions, market houses, fruit and vegetable stores, commission houses and grocery stores.

Disposal of Human Excreta

123. All human excreta in cities and villages shall be deposited in sewers, cesspools or vaults. The cesspools and vaults must be made water-tight and fly-proof.

124. All cesspools and vaults must be cleaned out at least once a year, and at such other times as may be considered necessary by the local health officer.

125. No abandoned well or deep well shall be used as a receptacle for sewage or household waste.

Construction of Buildings

126. Whenever it is proposed to build any school, hospital, almshouse, prison or other public institution, the plans and specifications for the same in respect to sanitary conditions shall be submitted to and filed with the Minnesota State Board of Health, and no such building shall be constructed until the sanitary arrangements of the same have been approved by the said Board.

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THE LYMPHATICS IN APPENDICITIS*

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BISMARCK, N. D.

So much has been said and written about the vermiform appendix that anyone who proposes to add another word to the subject must feel himself called upon to give some reason for being commonplace. My reasons are, first, that appendicitis is still prevalent. It continues to be a very frequent and dangerous disease, threatening the comfort and life of the individual, and causing anxiety and often regret to the medical man. I can truthfully say that in my brief experience no one disease has caused me more worry, and distress of mind and body, than appendicitis. In the second place, the rapid advance of medical knowledge has not failed to comprise appendicitis,—its etiology, pathology, and complications,—and it will repay us well to occasionally review new ideas on the subject.

In a prehistoric stage of our development the processus vermiformis was, no doubt, a very useful part of our digestive apparatus. At one time it had the same anatomical structure as our intestine. The degenerative steps through which it must have passed to reach its present condition, we are unable to trace minutely. The appendix has followed, however, the usual plan in the retrograde process of the component parts of an organ no longer necessary in the physiological economy. The more specialized part, the epithelium and mucous membrane, suffered first, while the structures derived from the mesoblast remain longer. Hence, we find the appendix with an inferior variety of mucous membrane, but rich in lymphoid tissue; in fact, the original Peyer's patches, or solitary glands, formerly numerous and of large size, have been retained, probably

in their full number in the modern appendix, though they are greatly diminished in size. There are from 100 to 200 of these glands, or lymph follicles, in the normal averaged-sized appendix (Lockwood). Each is surrounded by a lymph-sinus from which the lymph vessel escapes through a small opening in the muscularis, and enters the meso-appendix. From their beginning the lymphatics follow the arteries rather than the veins, and this continues to be true until the last glands are entered near the aorta. In the meso-appendix the small lymph capillaries unite into larger lymphatics.

This excessive amount of lymph follicles in the appendix is in itself a source of grave danger; for, as the lymph follicles in the intestines easily become inflamed, swollen, and ulcerating from the presence of infection, so do those of the appendix readily become affected by every toxic agent to which they are exposed. And this is the difference between the two: when a few Peyer's patches in the intestine become swollen, they are far enough apart to allow free circulation to the intervening intestinal tissue; but an infection of the closely situated appendical follicles may cause pressure and swelling enough to interfere seriously with the proper blood supply. The terminal character of the arterioles of the appendix enhances this possibility. In the presence of rapidly growing bacteria this is but the beginning of necrosis of part or all of the organ (Fowler, Breuer).

The lymph vessels in the meso-appendix are four or five in number, and pass through one or more glands in the majority of cases. Tixier found that there were no lymph glands in the meso-appendix in one-half the cases he examined.

*Read before the North Dakota State Medical Association, June, 1906.

When present they are situated some distance from the appendix and behind the ileum. From our own experience it can be stated that in several cases of appendix lymphangitis, where a veritable chain of enlarged glands existed in the retroperitoneal space, it was not possible to palpate with a certainty enlarged glands in the meso-appendix.

Of less importance are the occasional lymph glands on the cecum near the root of the appendix.

On the ileocolic artery, behind and rather above the angle of ileum and cecum, is a constant group of glands into which the appendical lymph vessels drain. These are considered the regionary lymph glands of the appendix. Continuing upward the lymph stream goes from gland to gland along the ileocolic and superior mesenteric arteries to the aorta.

In fetal life the cecum and ascending colon have a very long mesentery and are freely movable. Later in life this mesentery disappears to a greater or lesser degree, and is often found entirely absent. This means that the cecum and ascending colon in some people are attached to the posterior abdominal wall with the peritoneum covering them only in front and laterally. The space between the muscles of the back and the cecum is then taken up by a loose areolar tissue, which fills the rest of the retroperitoneal space. Through this tissue run innumerable lymph vessels, which anastomose more freely the greater the extent of contact between bowel and posterior abdominal wall. The lymph glands, however, still retain their relation to the arteries of the mesenteries.

With these anatomical facts in regard to the lymphatics of the appendix before our eyes, many surgical and pathological phenomena about this region are easier of explanation.

Let us assume that a slight injury has been sustained by the mucous membrane of the appendix. It may have been caused by a so-called enterolith in the appendix, or it may have been an inflammatory insult from the extension of an ileocolitis. The wound becomes infected by the micro-organisms of the appendical contents. The small lymph follicles in the submucosa of the appendix constitute the first battle-ground between germs and leucocytes. Several writers have described miliary abscesses in this location, following acute appendicitis. We have succeeded in finding a small abscess in the wall of an appendix removed two months after a rather mild attack of acute inflammation.

One or more of such collections of pus may rupture through the mucous membrane and discharge into the lumen of the appendix. If free drainage existed into the cecum no serious dam-

age would result; but an appendix distended with mucopurulent, infectious material, because of mechanical obstruction to such drainage, is a danger proportionate to the virulence of the bacteria present.

From an infection in the appendix a lymphangitis spreads rapidly along the vessels in the meso-appendix toward the regionary glands described on the ileocolic artery. Toxic material may be produced so rapidly in the appendix that the lymphatics are unable to carry it away, and a thrombosis may take place. This means gangrene for the part of the appendix affected by the thrombus, and then follows a perforation at the location of the gangrene. If this has happened before time has allowed sufficiently firm adhesions to form about the area, a progressive peritonitis is unavoidable. If, on the other hand, the region is well partitioned off from the rest of the peritoneal cavity by inflammatory adhesions and by fortunate location of the appendix, nothing more serious will occur than the beginning of an intra-peritoneal abscess.

I use the expression "fortunate location" purposely. An individual with his appendix located in the iliac fossa, external to the cecum, or even in the pelvis, is much less liable to serious complications, in case of abscess formation, than is one whose appendix is situated nearer the center of the abdomen, among the small intestines.

It is to be remembered that the lymph vessels running in the subserosa of both the appendix and the meso-appendix, may be but a hairbreadth from the peritoneum. In an infection from virulent bacteria, it is possible for the microorganisms to find their way to the peritoneum through the infected wall of the lymph vessel. The thrombosis and gangrene referred to above, may be only a microscopic spot in the wall of the appendix—just enough to let the bacteria through. In both of these conditions a peritonitis begins without a perforation visible to the eye.

But there may be no bacteriological perforation of the appendix, and the lymphangitis in the meso-appendix may be insignificant, and yet our patient may be doomed to have an abscess. Bacteria may find their way to the regionary lymph glands in the mesocolon. Gland after gland may become infected and suppurate until the bowels, mesentery, and posterior peritoneum are pushed far forward, to give room for a retroperitoneal accumulation of pus.

A case of our own illustrates not only this fact, but also the difficulty of diagnosis. A girl, 12 years old, was first seen ten days after the onset of a rather typical case of acute appendicitis leading to abscess formation. The girl was thin, and a large mass was easily palpated in the right side of the lower abdomen. Pain, fever, leucocytosis,

and other symptoms all pointed to an abscess, localized in the manner most usual to intraperitoneal, appendical abscesses. An incision was made into the abdomen near the anterior-superior spine of the ilium. Instead of finding an abscess just behind the abdominal wall we found the peritoneum practically normal, and the abdominal cavity free from omental or intestinal adhesions, but a small amount of serous fluid was present. The tumor was found to be a fluctuating mass behind the cecum, which was crowded against the anterior abdominal wall. The appendix was not readily found, and therefore no time was wasted searching for it. The peritoneum was raised from the external side of the incision and carefully stripped from the muscles underneath, until a large pus pocket was reached behind the cecum and the colon. It was drained, and the patient recovered.

About two months later the patient returned for appendectomy. On opening the abdomen this time we found a few adhesions between omentum, cecum, and lateral abdominal wall, opposite our old line of drainage. The appendix appeared thick and infiltrated. It was folded upon itself and rolled under the thickened meso-appendix, but no fibrous adhesions were on or about it. It was found to contain two fecal concretions, opposite which the mucous membrane was ulcerated.

This case demonstrates well the part lymphangitis and lymphadenitis can play in appendicitis. The fact that the peritoneum was free from evidence of infection, while a secondary abscess formed behind the cecum from a primary ulcer upon the mucous membrane of the appendix, leaves room for only one explanation, and that is lymphangitis in the meso-appendix and suppuration of the regionary lymph glands.

We have already mentioned that the lymphatic anastomosis behind the large intestine is proportionate to the absence of mesocolon. For this reason, in a case where the cecum is applied more directly to the muscles of the back, a lymphangitis from the appendix is much more apt to involve the whole retrocolic region than in a case with a long mesocolon. The lymphangitis may extend along the colon until the renal lymphatics are reached, and the glands upon the renal vessels become swollen. What effect this has upon the function of the kidney at the time of acute appendicitis, I do not know; however, excluding cases of albuminuria which were undoubtedly toxic in their nature, we have had under observation two cases of acute appendicitis in which there was an albuminuria, which disappeared with the attack. Both cases began abruptly and severely in otherwise perfectly healthy individuals, and ended in three or four days without ab-

cess formation. Both cases were subsequently operated upon, and in neither was the appendix in close relation to any of the urinary organs. We have all seen many cases of lymphangitis and lymphadenitis of the groin, axilla, and neck, in which the local and constitutional symptoms were much more marked than in the two cases mentioned, yet the urine was normal. Then why the albuminuria in these appendicitis cases? It seems very probable to me that it was caused by the lymphatics in a mechanical way, rather than by way of toxic absorption.

I regret that in neither of these two cases was there any note taken of the condition of the mesocolon.

The enlarged glands behind the peritoneum interfere greatly with the nervous and vascular mechanisms of the mesenteries. A thrombosis in the mesenteric veins from this cause is not usual. But one of the most serious complications of appendicitis, paralysis of the bowel, is indirectly due more to this than to any other agency (Cushing).

After previous attacks of inflammation the lymphatic anastomosis may multiply in any direction, and cases of enlarged and suppurating inguinal glands during acute appendicitis, have even been described. This can occur when cecum and appendix are bound firmly by inflammatory adhesions to the abdominal wall, low down in the iliac fossa.

The lymphatics in the omentum help to carry infection away from an inflammatory mass to which this membrane may become adherent. This is shown by the secondary abscesses not infrequently encountered in the omentum surrounding an inflamed appendix or other infected organ. We may say, therefore, that the lymphatic anastomosis is also in direct ratio to the number and extent of previous inflammatory processes in this region.

We will now consider the relation of pain to lymphangitis.

It has been shown by Lennander and others that there are no nerves carrying the sensation of pain from the walls of the stomach, intestine, gall-bladder, or appendix. On the other hand, the peritoneal serosa and subserosa, lining the walls of the abdomen, are intensely sensitive. When an abdomen is opened under local anesthesia it is difficult to cocaineize the parietal peritoneum so that it can be incised without causing great pain. Once inside the abdomen, however, the organs can be handled, cut, crushed, and sewed with very little discomfort. This is true alike in healthy and diseased conditions of the respective organs.

Why then, should there be any pain at all from an inflamed appendix? The answer according to Lennander is, it is from the lymphan-

gitis and the lymphadenitis in the retroperitoneal space. This area is full of sensitive nerves, and as soon as the lymph glands become inflamed and swollen the pressure is felt on these nerves. This explains why, in the majority of acute attacks of appendicitis, the first pain is located in the neighborhood of the umbilicus, that is, opposite the retroperitoneal lymph glands. It shows also how easily the origin of the lesion can be overlooked early in the attack. The pain may be deep-seated in the abdomen or in the back, or it may be referred even to the left side, if lymphatic anastomosis has carried the infection to glands on the opposite side of the aorta. Again, the first glands giving rise to active symptoms may be high in the abdomen, causing, reflexly, nausea and vomiting.

Diagnosis of "appendical colic" and "catarrhal appendicitis," which were perfectly acceptable a few years ago, are not supported by these findings. It has been shown (Oberndorfer) that an inflammatory disease can go on in the appendix, even to the extent of ulceration and gangrene of the mucosa, and the patient suffer no pain and no fever. This simply corresponds with similar processes in other parts of the intestinal tract. Symptoms come with lymphangitis.

I do not wish to convey the impression that pain in appendicitis is produced solely in the manner described. In the greater number of individuals the appendix is at some point located

near the parietal peritoneum. Fibrinous adhesions caused by inflammation may surround the appendix on every side and involve the part of the peritoneum nearest to it. Repeated attacks add new adhesions. Pain is then referred to the region of the parietal peritoneum thus involved.

That fever is dependent upon toxic absorption through the lymphatics is so well known that we need not dwell upon it in this connection. When an appendix becomes gangrenous early in the disease there may be no elevation of temperature, because the source of infection is shut off from the lymphatics.

In conclusion, let us not forget:

That a retroperitoneal abscess can develop secondarily from an intraperitoneal infection.

That general septic peritonitis may be caused by an appendical lymphangitis, without a macroscopic perforation of the appendix.

That an acute appendicitis which becomes early localized as a painful mass in the right iliac fossa, gives a far better prognosis than one in which the symptoms show the lesion to be located nearer the middle line.

That pain is a poor indicator as to the location, nature, and extent of an intra-abdominal lesion.

That fever is equally unreliable.

That fever, nausea, pain, and shock in acute appendicitis, must be ascribed largely to retroperitoneal lymphangitis and lymphadenitis.

SKIN-GRAFTING: MODIFIED OPEN METHOD*

By W. D. KELLY, M. D.

ST. PAUL

All operative procedures of the present day tend to simplicity, simplicity of preparation, simplicity of methods, simplicity in application of methods. Skin-grafting of the past was considered a major operation, but, as a matter of fact, it can be made to be quite simple.

The most common causes for grafting are burns, sloughs, ulcers, and large granulating surfaces. Where destruction of skin, in any or all of the above conditions, occurs, grafting may be necessary because of the inability of the skin to extend its healing qualities beyond a certain limit. There appears to be an affinity between the epithelium at the margin of the area of the wound and the epithelium of the graft, and the surgeon takes advantage of this peculiar condition. It has been often noted that where

grafts are placed on granular surfaces, the true skin is stimulated to further effort, and healing proceeds. You have all seen cases of grafting where the epithelium at the margin of the area will rapidly extend to, and unite with, the epithelium of an "island" graft, while at other places on the margin there is no marked projection toward the center.

The usual manner of skin-grafting is by the large Thiersch grafts or by the small Reverdin grafts. Many different materials have been used, such as chicken skin, frog skin, pig skin, etc., but the human skin seems to give the best results, and there are very few instances where it is not possible to secure human skin, if not from the patient, from a volunteer or a friend of the patient.

There can be no doubt but that successful skin-grafting hastens very materially the healing pro-

*Read before the Minnesota State Medical Association, June 20 and 21, 1906.

cess, and it is surprising that it is not taken advantage of more frequently. As a rule, I believe skin-grafting is taken advantage of only as a last resort and after all other methods of effecting a cure have been abandoned. Doubtless this is, in a measure, due partly to procrastination by the surgeon and partly to the fear of the patient. To the laity the term skin-grafting suggests the most formidable of all formidable operations. Many doctors regard it as an operation requiring the administration of a general anesthetic. A general anesthetic has not been used in my work for a long time. Local anesthesia has answered the purpose, and with the elimination of the necessity of general anesthesia the operation resolves itself into one of minor surgery and all that is necessary is to gain the patient's confidence.

Where the surgeon has large granulating surfaces presented, it would seem advisable to graft at the first sign of the failure of the marginal epithelium to extend. By early grafting the patient is in better condition physically than at a later date, especially if the nature of the wound requires him to lie in bed, and the healing process will proceed more rapidly. In fact it is amazing with what rapidity the surface of a wound will be covered, and at times weeks, and even months, will be gained by early skin-grafting.

The site for taking grafts should be, if possible, that portion of the body which corresponds to the wound that is to be repaired; for instance, if a limb is to be grafted the skin should be taken from the same location of the opposite limb, if possible.

Failures in skin-grafting occur for many reasons. Probably the most common ones are faulty technic, obtaining grafts from patients after a protracted illness, cyanotic condition of skin, anemia, etc.

I know of no operation where the most expert is so liable, before completing the operation, to do something that may tend to cause an infection of either graft, wound, or instruments. The mere fact that the patient is awake and aware of what is being done, has to do somewhat with the failure to retain strict asepsis, by the field of operation being infected, either by the inquisitiveness of the patient or by touching the hands of operator or assistants or instruments, dressings or towels, the solution, or even the grafts.

It is well to ask the patient to be operated upon to assist in the operation, by having a towel elevated before him and held by the corners with either hand, continually insisting that he shall hold the towel at a certain height, in front and above the

face, so he cannot see the operation, his attention being distracted by the task assigned him. By so doing, I seldom have had trouble from what I consider the most frequent source of failure, namely, the hands of the patient.

In anemic, cyanotic skin or protracted illness, skin for grafting should not be taken from the patient, but obtained from an individual who will volunteer grafts for the site of operation, whose age and temperament is about the same as the patient's. Such persons should also be healthy, and without any skin eruption, or other evidence of disease.

PREPARATION OF THE PARTS TO BE USED IN MAKING GRAFTS

The skin is prepared by simply washing with sterile water or normal saline solution. For local anesthesia I use eucaïne or cocaine. A 2 per cent solution may be used. Starting at the lower portion of the intended graft, with the hypodermic needle enough solution is injected to produce a bleb. The first introduction of the needle is a little painful, but each succeeding injection is painless. The needle is inserted at the upper part of the first bleb, another barrel of fluid emptied into the skin, another bleb is formed, and the process is repeated in this manner until a large portion of the skin to be used is encircled with these blebs. The portion of skin to be used in the graft is again washed with normal salt solution or sterile water, and a large toothed hook is inserted into the skin and the skin made tense. A double edged spatula knife is used to take grafts, by following a flat piece of board upward toward the imbedded hook with a sawing motion. In this way a very wide and as long a graft as you require can be made. The skin-graft should be made as thin as possible. A thick graft should not be used because it will carry with it portions of the underlying fatty tissues, which, as grafts, would be worthless. The successful grafts are follicles, the ones made through the muscular parts of the skin. In making grafts start from below upwards, against the hair and in this way you are less liable to cut the graft short or have the knife appear unexpectedly with only a small graft.

The graft is now placed upon a flat holder, and immediately placed upon the granulating surface. If the skin is too vigorously washed and excessive bleeding occurs, on the under side of the graft will be found a blood clot. The under surface of the graft may be wiped dry before it is laid on the granulating surface, and all clot removed.

PREPARATION OF OPEN WOUND.

If the open wound is of recent date and granulating surfaces appear healthy, even if a discharge be present it will be unnecessary to curette or disturb the wound in any way, except to wash it carefully with normal salt solution or sterile water. If, however, the granulations are spongy, soft, or pale, it is well to use a blunt curette to freshen up the surfaces of the wound.

All bleeding should be stopped, and the blood clot removed before grafts are applied. Speed is not necessary, but it is paramount that absolute cleanliness be maintained through the entire procedure. Granular surfaces are prepared in the same manner as the skin, simply washing with normal salt solution.

METHOD OF APPLYING GRAFTS

In placing grafts they should be smoothed out upon a spatula or flat spoon, and the graft is applied with the follicles and the hair running in the same direction as the hair of the parts around the wound. The spaces under the grafts, when applied, should be obliterated, and the grafts made to closely agglutinate to the granular surface, which may be accomplished by using a rolled piece of gauze, and after application of the graft this gauze is rolled on the graft, either upward or downward, until the graft gives an appearance of translucency, and gives the appearance of sticking or drawing in closely to the bottom of the wound. If, on the contrary, the grafts curl up and become thick and white, with a look somewhat similar to a link of tape-worm, such grafts, in the majority of instances, will not be successful.

The modified open method is to be commended and preferred to the open method, because it is possible to enclose the grafted surface in a dressing, which gives access of air and light, and does not allow of infection from without.

The dressings used on portions of body other than limbs, are usually a thick piece of sterile gauze, placed on either side of the wound and held in place by strips of oxide of zinc plaster, which plaster is held far above the wound by the gauze. A single strip of gauze is placed over the entire wound, over the above dressing, and held in place by two oxide of zinc straps. In this way the patient or any one else is prevented from infecting the grafted site.

Where it is necessary to use splints, as, for instance, in dressing limbs, malleable zinc wire may be used to advantage. In wounds of the hand, I usually employ an anterior splint, to which is attached the malleable zinc wire posteriorly. In this way it is possible to fix the limb so it can be carried about without injury to the grafts.

In dressing a stump it might be advisable to use a cage. In this manner the patient is allowed to be wheeled about with perfect safety.

The modified open dressing is usually completed by a single strip of gauze over the entire dressing. This dressing usually remains for four or five days, and if, at the expiration of this time, it is necessary to remove it, this can be done by cutting the dressing at right angles. The wound can then be dressed, and if blebs are formed they should be incised with either scalpel or scissors and simply washed with either permanganate or argyrol solution, but not irrigated.

SUMMARY

By this method the failures are less frequent. The use of general anesthesia is no longer necessary.

The early operation gives more rapid results and less failures.

Antiseptics are not contra-indicated after the graft has begun to form.

Blebs should be opened freely and washed out with antiseptic solution.

DISCUSSION

DR. J. W. LITTLE (Minneapolis): I am much pleased to hear this paper. I think skin-grafting is one of the most beneficent operations we have in surgery. It has done as much good as any other operation of as simple a character as it is. I saw a boy a few days ago who had the entire palm of his hand cut out by a shaping-machine. Before skin-grafting days you can imagine the time it would have taken for that area to enclose, and when closed he would have had a contracted hand. In skin-grafting we now put a wire cage over it so as to have no dressing in contact with it. That is a good deal better way than we used to have, when we applied protective material of rubber and fastened this material, and still under those protective strips there would be a little air, more or less, and when pus formed it would collect there, and would soon rip out the grafting.

I think the method of the doctor is preferable to the method formerly employed. Putting on an ordinary wire screen, boiling it so you know it is clean, and putting it over the palm so you can lift it up to look at any of the grafts, is a simple method, indeed.

I never have tried making the grafts in a certain line so as to apply them in the same way. I never noticed any difference, but the doctor says there is. I am not able to dispute his argument. I have never used it. I have generally given the patient a general anesthetic. I was sure of my technic, and when I had a large surface to graft I had no trouble. I prefer to have patients sleep, for otherwise they would probably see too much of my work. If the graft were large I think I would do better.

DR. L. F. SCHMAUSS (Mankato): Dr. Kelley has certainly covered the field well, and if we follow his technic we shall get good results. There are two things I would like to caution against: One is that we all have a tendency to put the grafts too close together; they must not overlap and should not touch each other; if grafts touch each other the results will not be as good as if there is some interval. There should be about an eighth or at least a six-

teenth of an inch space between the grafts. Another thing I would caution against is the use of an antiseptic. If an antiseptic solution is to be used in connection with skin-grafts it must be mild.

Transplanted skin will not stand much continuous pressure, and an important thing is to keep away pressure, as the doctor pointed out. The old method consisted in covering the grafts with gutta-percha strips and putting on a moist dressing, but we must not apply a tight bandage, because if pressure is exerted it will cause necrosis of the grafts; it must be put on lightly. Again, a moist dressing should not be continued too long. It is better to keep the dressing away entirely where possible.

In regard to the source of supply of the grafts, I would say that at the Cook County Hospital practically all the skin-grafting was done from amputation stumps, and sometimes these stumps laid about a day (properly protected) before they were used. I could observe no particular difference between the results.

DR. C. H. MAYO (Rochester): I heartily enjoyed the paper, and would like to try the method the doctor advocates. I think the methods of various operators arrived at through their own experience mean more to them than some of these changes. I used to use the wet method, and got good results. I think the dry method supplies equally good results with a great deal less work.

Concerning the method of dressing, I like to employ gauze rolls set about the grafted area; then take ordinary celluloid, the same as you see in automobile curtains or use mica. This material can be covered over, the gauze dressing applied, and then cut open a flap opposite to where your mica rests,

and you can observe your grafts and never disturb the dressing. All we do is to throw the flap down and look through the window of celluloid or mica, and we can tell whether any attention is needed.

DR. LITTLE: We have all noticed in this work that grafts taken from the person upon whom they are to be applied usually act better than others. If somebody can explain exactly that feature of transplantation I would like to hear something about it.

DR. W. D. KELLEY (Essayist): My best experiences were in using skin from recently amputated limbs from the fact that this method is so simple. I believe there was some gentleman who understood me to say that the skin was grafted without pain, and that the young people were making fun all the time it was done. When it comes to a simple matter like that, it seems to me it is better to take skin for the graft from the person to be treated than to resort to skin from a recently amputated limb.

I have had no experience with the celluloid Dr. Mayo speaks of, but I see no reason why it should not be commended. I believe it would be a good thing.

In regard to the use of an antiseptic, that is the point I wish to speak of. I have tried many times in pus blebs, where we find there is serum, and I had to make resection of the skin-graft itself or tear the graft off. Rather than have that occur I have tried argyrol and a free incision of the bleb right through the center, then washing out this bleb, and the little point of skin that formerly rested there on the surface will probably take hold again. In that way you will probably avoid a resection of the skin.

TUBERCULOSIS*

BY H. M. BRACKEN, M. D.

Secretary and Executive Officer of the Minnesota State Board of Health

ST. PAUL

The statistics of total deaths and deaths from tuberculosis in Minnesota during the past eleven years are as follows (the total deaths include still-births):

Year	Deaths from tuberculosis	Deaths from all causes
1895	1,693	15,418
1896	1,661	14,462
1897	1,619	13,945
1898	1,704	15,279
1899	1,703	15,340
1900	1,864	17,236
1901	1,756	16,927
1902	1,759	16,606
1903	1,866	17,178
1904	2,130	18,600
1905	1,936	18,963

It is now a well recognized fact that tuberculosis is a contagious disease, and that it can and should be controlled. The importance of controlling it must be recognized both from the humanitarian and the financial point of view. It

is sad, and at the same time humiliating for friends, communities, and physicians, to see case after case of tuberculosis, and know that these will be followed by other cases, simply because the proper means of preventing the disease are not in force. The old idea of heredity must give place to the more recent and reliable knowledge that places tuberculosis among the contagious diseases. When a whole family is carried away by death from this disease in a comparatively short time, we can no longer charge this condition against Providence, but must admit that it is due very largely to the fact that mankind is neglecting to put into force the means at hand for suppressing this dread disease. It is an unfortunate fact that, in dealing with disease, humanity is too rarely taken into consideration. The question of utility, of dollars and cents, is often given first place. Financiers can realize, however, that it is a good business proposition to spend one dollar in order to save ten or more dollars. Dealing with consumption in Minne-

sota during the past few years from this heartless but business-like standpoint, what are the facts? Minnesota is losing annually by death from tuberculosis about 2,000 people. Valuing a human life at \$5,000, this means an annual loss to the state of \$10,000,000; but this is not all. For every death from consumption it is estimated that there are four living individuals suffering from, and doomed to die of, the same disease. This gives us a probable constant consumptive population of at least 10,000 people. When we take into consideration the loss of labor of the 8,000 ill, but not dying, of consumption in Minnesota each year, the cost of caring for them, the cost of medical attendance and drugs, and the crippling of the future financial prospects of children dependent upon them, it is safe to estimate that at least \$5,000,000 more have been lost, thus making with a conservative estimate an annual loss through this one disease to the state of Minnesota of \$15,000,000.

The 2,000 people killed annually in Minnesota by tuberculosis represent about one-tenth of the total deaths in the state for that period. There is no other disease that kills so many people. If the death-rate from smallpox for a single year was to equal that of consumption, the people would rise as a body and demand that the disease be suppressed.

What are we going to do? Shall we continue in our present state of apathy, pleading ignorance and inability to act, or shall we enlist in a movement to bring every one into line in the suppression of this disease?

Consumption is not a highly contagious disease like smallpox, scarlet fever, and measles. Its contagiousness is due to the presence of a known bacillus, which is found in the sputum. To prevent the spread of consumption it is necessary to destroy these germs as they come from the infected individuals, and this is a comparatively easy matter. The germs can be destroyed by collecting all discharges or secretions containing them, and burning or disinfecting them promptly before they have an opportunity to become dry, thus allowing them to be scattered with the dust to infect others. These germs do not live long when exposed to sunlight, and the danger of infection from them is comparatively slight in the open air. The tuberculous should therefore lead an out-of-door life so far as possible.

It is very important that the consumptive should be well nourished, in order to resist the further ravages of the disease. Good food is an absolute necessity for these patients.

Drugs are of little value and should never be used except under the direction of the physician. Above all things, the consumptive should not waste money on the many advertised cures which

do an immense amount of harm, directly and indirectly.

The consumptive needs *fresh air, good food, and but little drugging* in his fight against the disease. Alcoholic stimulants, which formerly were looked upon as of great value in the cure of consumption, are now considered as seldom beneficial and often absolutely harmful.

While there are a few who are very susceptible to infection with tuberculosis, the great mass of people would escape it if those suffering from this disease would take but reasonable precautions by destroying their sputum before the tubercular germs have had a chance to reach the uninfected.

It is quite evident from the facts already presented that consumption will flourish to a much greater extent in dark, poorly ventilated, and unsanitary places than in homes where cleanliness, sunlight, and fresh air prevail.

Consumption is most easily controlled before it has gained much headway, i. e., during the early stages of the disease. It is important, therefore, that patients should early know the nature of the disease. It is important that physicians should early recognize the presence of the disease. The physician cannot be too careful. He should give a guarded opinion even in doubtful cases. Otherwise the first stage may be passed over as an ordinary cold, and the mistake not discovered until the disease has reached a stage difficult to control.

Physicians in Minnesota can add to their own opportunities for investigation through the work of the laboratory of the State Board of Health where examinations of sputum are made free, *if the information thus given is to be used as a basis for local and individual sanitary regulations looking to the prevention of the spread of the disease.*

Physicians have a great responsibility resting upon them, for it is a well known fact that a very large percentage of consumptives can be cured if the disease is early recognized, while for the advanced cases there is practically no hope. Too often in the past have both physician and patient assumed that with a diagnosis of consumption once made there was but one ending for the disease, namely, the death of the patient. Too often has the physician evaded making a diagnosis of consumption in a suspicious case for fear of alarming the patient. With our present knowledge as to the curability of this disease, it becomes almost criminal for a physician to neglect the use of every diagnostic aid in order that he may early determine the presence or absence of this disease in any given individual. When ten per cent of all the deaths in Minnesota are due to consumption, physicians should always keep in mind when examining a patient the possibility of the presence of this

disease, and should only state its non-existence after a careful use of the most reliable methods of examination now in the hands of the medical profession.

With the disease once recognized in its early stages it becomes important that the fact should be known by the patient *at once*, and, further, that the patient should be informed as to its curability. At the same time he should be instructed that such favorable results depend largely upon his habits and mode of life.

In considering the treatment of consumption these patients may be divided into two groups: first, the early stage or incipient cases; second, the advanced or hopeless cases. Undoubtedly the best place for all the mild cases is in a special sanatorium. These institutions are becoming very general, and in them the patients are not only well cared for, but are instructed as to their future methods of procedure for the protection of both themselves and others. It is a difficult matter sometimes for the physician to be sure that his orders relating to diet, fresh air, proper living, etc., are carried out; but this difficulty disappears when the patient is under the supervision of trained attendants at these sanatoria. It is an easy matter for a patient in an institution to follow the daily routine of his associates, and to carry out certain important details in the mode of living. A patient at a sanatorium soon learns the benefit to be derived from fresh air during sleeping hours as well as during the daytime. It is almost impossible for physicians to persuade some patients that sleeping in the open air is not only free from danger, but is an absolute necessity if the consumptive is to derive the greatest possible benefit in the treatment of his disease.

It is not necessary or practicable that consumptives should stay indefinitely at sanatoria. The benefit derived from a few months of sanatorial treatment, together with the knowledge obtained during such residence as to how to live, should so frame the future of any patient as to aid greatly in his resisting the disease after a return to his home. A strong advocate of municipal sanatoria says: "It is one thing to make the patient understand the instructions given, it is quite another matter to insure his conscientiously carrying them out. If he can be taught heartily to believe that his own welfare and that of his family depend upon his carrying out the precautionary methods recommended to him, we may usually rely on his co-operation. Apart from the possibility of a cure, it is in the public's interest to admit consumptive patients, not living under favorable conditions at home, to the local sanatorium for a month or two, according to circumstances, for such a course tends

to diminish disease and improve the public health in three ways:

"1. The patient himself would improve in health and be enabled to start afresh with an increased prospect of recovery.

"2. While he was in the sanatorium his home would be cleansed and purified, and his wife and family would have a holiday in the sense of being free from repeated attacks from the contagium of phthisis.

"3. The patient when sent home would have been taught to manage his expectoration in such a way that he would no longer be a source of danger to his family and to those with whom he worked."

The curative aspect of sanatorial treatment may in many instances be regarded as of secondary importance. We are concerned in the education of these tubercular patients. In the sanatorium they have a practical, personal demonstration of the benefit to be derived from an abundance of food, open-air life, and freedom from infected dust. When they leave the sanatorium they are, without exception, ardent advocates of the fresh-air regime, and they are not apt to again become careless in expectorating.

If we are to accomplish the greatest good in Minnesota we should have sanatoria for the tuberculous, not only in close touch with our great business centers, but also in the more thickly populated rural districts.

Sanatorial treatment is not possible for all incipient tuberculous patients. An attempt should therefore be made to approach this ideal treatment at or near the homes of some of these individuals. This may be secured through district nursing. The employment of district nurses should become general both in country districts and in villages and cities. The district nurse should visit the tuberculous in their homes, should see that the patients understand how to properly take care of their sputum in order to prevent infecting others, should insist upon it that their sputum is disposed of as directed, should instruct the patients or their attendants in matters relating to a proper dietary, should encourage the patients in leading an out-of-door life, and should give instruction as to the care and ventilation of the home and especially of the sleeping-room of the individual invalid.

The district nurse should be the assistant of the attending physician. She should be showing the invalid and his associates how to carry out the physician's orders, and, more, she should be constantly on the watch to note whether those caring for the patient are doing their best to promote his recovery and to protect the uninfected from infection. The nurse should visit tubercular patients frequently (at least every

other day at the outset), and should give sufficient time to each case to show them exactly what she wants done and how her instructions are to be carried out. We all know how much more efficient the care of those ill with an acute disease has become since the introduction of the trained nurse into the sick-room. We all know that in the average household its members are not experts in the art of nursing. Hence they are not competent to properly care for each other when ill. Sympathy, interest in, and anxiety for, a patient may all be present, but such evidences on the part of relatives will not take the place of good nursing.

If there are over 2,000 deaths annually from tuberculosis in Minnesota, there are probably at least 3,000 cases annually that should come under sanatorial treatment; i. e., cases that belong to the hopeful or incipient class. A large percentage of these will have to be cared for at their homes. This work must fall upon the local physicians, to be aided, let us hope, in the near future by the district nurse. If these mild cases do not receive proper treatment, they will soon pass into the advanced or hopeless group of cases, and in addition become sources of danger to all those living in the same homes. It is important to care for the mild consumptive cases in order to bring about their recovery. It is important to care for the advanced or hopeless consumptive cases in order that they may not endanger the lives of others. The danger of the disease spreading from the mild cases to other individuals is comparatively slight and can easily be controlled. The danger of the disease spreading from the severe or advanced cases is great and is not easily controlled. As already stated, the germs of the disease are in the sputum or expectorated matter. The very sick consumptives often cannot or will not take the necessary steps to care for and destroy the infectious matter that they are coughing up. This results too often in making not only the room chiefly occupied by the patient, but the entire home, a source of danger to other members of the family and to some extent to visiting friends. This is that so often causes one death after another in a family. This is infection and not inheritance. It is a condition that is avoidable and inexcusable.

Advanced cases of consumption should, speaking from a theoretical point of view, always be taken from the private house where they endanger the lives of others to a public institution where proper care can be given them without endangering the lives of any. This of course applies only to those of moderate means who are not able to provide for themselves proper nursing and isolation at home. Institutions for the care of these advanced cases are rare, and yet,

if we consider the greatest good for the greatest number of people, they are of even more importance than the sanatoria provided for the mild cases, for these latter institutions are of benefit chiefly to the afflicted, while the institutions for the care of the advanced cases are not only humane havens for the doomed, but also a means of protection for the many who would otherwise become infected. It is quite evident that a very large percentage of these advanced cases spend their last days in private homes and in boarding houses. Under such conditions, how can we best care for these unfortunates? We must again look to the visiting nurse for assistance. If the trained nurse is an important factor in the care of the mild or early cases she is still more in demand in the care of the advanced cases. The mild or early cases require somewhat constant nursing for a comparatively short period; the advanced cases require constant and careful supervision for a longer time. The first demands the immediate and close attention of the nurse; the second may be greatly benefited by the frequent visits of a trained nurse, extending over a long period of time. Nurses for this latter class of patients are becoming a prominent factor in the care of the poor in our larger cities. There is no reason why they should not become important factors in the care of the same class of sick in the country districts.

It may appear to the casual thinker that the district nurse and the local sanatorium are impracticable and impossible. Not so. The local institution can be built and maintained as an annex of already existing institutions in many instances. The expense of construction need not be great and can easily be borne by the municipality, the county, or individuals philanthropically disposed. A weekly rate of maintenance can be charged those admitted. Such expense can be borne by the individual, if able to pay; otherwise by the municipality, county, society, or individual sending the patient to the institution. The same course may be pursued in the employment of a district nurse. In the care of the tuberculous, it is not so much a question of funds as it is of a place where they will be received or provision made for their care at home.

In summing up, the important points in the control of tuberculosis are—

1. An early diagnosis of the disease. In this the responsibility is about equally divided between the patient and the physician.
2. The education of the people, in order that they may know that tuberculosis is both a preventable and a curable disease.
3. The recognition of the fact that the general practitioner and sanitary authorities must work together in the care of those cases which

have become centers of infection, viz., cases with the tubercle bacillus present in the sputum.

4. The necessity for the proper care of tuberculous patients either at their homes or in sanatoria, in order to prevent the infection of others.

5. The necessity of considering the protection of the uninfected as an important factor in the control of tuberculosis.

6. The even greater necessity of caring for advanced or incurable cases than for the mild or curable cases, if the disease is to be brought under control.

7. The creation of conditions to meet all requirements in the care of the tuberculous, embracing sanatoria, district nursing, dispensaries, etc.

8. The formation of antituberculosis organizations, to take an interest in raising funds and aiding in providing for the proper care of the tuberculous.

9. The recognition of the fact that medication is but a small factor in the control of tuberculosis, while good hygienic surroundings for the patient, together with the proper prophylactic measures for the uninfected, are of the greatest importance in the control of this disease.

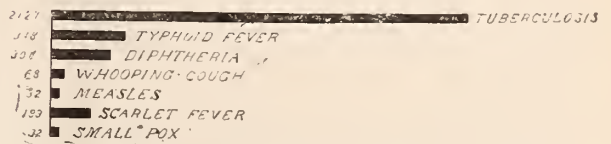
The tubercle bacillus is short-lived when exposed to sunlight. The danger of infection from a tuberculous individual is slight indeed as compared with that of those suffering from many other communicable diseases; in fact, such a danger may be reduced to a minimum by exercising the simplest acts of cleanliness. There has been an unreasonable alarm cry against the many possible channels for infection with tuberculosis. So far as tuberculous patients are concerned, the danger of their infecting others is not great unless they are suffering from the pulmonary form of the disease in the advanced stages.

The dangers of infection with tuberculosis from the dust in the streets and in public places

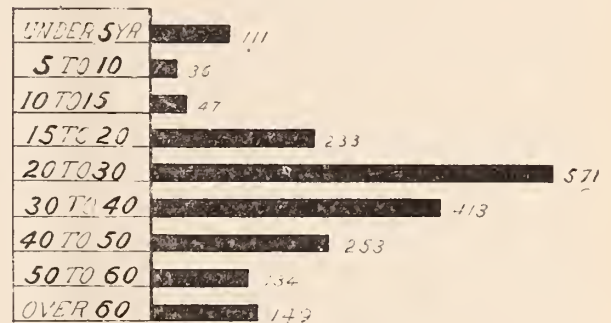
are not so great as might be imagined from the cries of some alarmists. It is well, of course, in a general way to use every available argument to bring about greater cleanliness in our streets, but our knowledge of facts compels us to admit that the tubercle bacillus soon dies when exposed to sunlight and fresh air. Where, then, is the greatest danger? The answer must be, in the immediate surroundings of the patient. This bacillus is for all practical purposes a house plant and tuberculosis is a house disease. At times, the number of living tubercle bacilli present in the house where a tuberculous patient resides may be so great as to overcome the resisting power of exposed individuals.

The following diagrams show (1) the number of deaths from tuberculosis compared with the deaths from certain other preventable diseases in Minnesota in 1904; and (2) the deaths from tuberculosis at different ages:

DEATHS IN MINNESOTA IN 1904



TUBERCULOSIS IN MINNESOTA IN 1904
DEATHS BY AGES



ANAEROBIC CELLULITIS, OR INFECTIOUS EMPHYSEMA*

By J. WARREN LITTLE, M. D.

Professor of Clinical Surgery, University of Minnesota

MINNEAPOLIS

Last year at the A. M. A. meeting Dr. J. Clark Stewart, of Minneapolis, reported two cases of anaerobic cellulitis occurring in the city, and I desire to report three more which have occurred since that time, two of which were under my care at the Asbury Hospital, and the other case was

reported to me and occurred at Stillwater. These cases were not infected here, but were brought here for treatment from country places nearby. The bacteriological examination of Cases 1 and 2 were made by Dr. S. Marx White, of this city. That of Case 3 was made by Dr. R. H. Mullin, of the University Laboratory of Pathology and Bacteriology, and is given in full herewith.

*Read before the Minnesota State Medical Association, June 20 and 21, 1906.

A report of the cases is about all that is necessary, but in order to refresh your memories upon the pathology, I will quote somewhat at length from Stengle's "Pathology":

Definition.—This term is provisionally applied to a form of infection that has been described under various names, such as gaseous gangrene, gas-phlegmon, emphysematous necrosis, anaërobic cellulitis, etc. Undoubtedly, it has been mistaken for malignant edema in certain cases. The disease is caused by the bacillus *aërogenes capsulatus* of Welch and Nuttall.

Etiology.—The bacillus in question is a non-motile organism of variable size, and about the thickness of an anthrax bacillus, with adjacent ends slightly rounded or square cut, and occurring singly, in pairs, clumps, or sometimes in short chains. Very rarely it occurs in long threads. It is easily stained with the ordinary anilin dyes or Gram's stain. A capsule is sometimes demonstrable in specimens obtained from the body or from agar cultures. The bacillus does not form spores. It is probably identical with the bacillus *phlegmonis emphysematosæ* of Frankel.

Cultivation.—The organism is anaërobic, no growth occurring on the surface of solid media in the presence of oxygen. In media containing fermentable material gas-formation is regularly observed. The colonies in agar are grayish-white or slightly brownish; those in the depth appearing as small spheres or ovals slightly flattened, with knob-like or feathery projections. The cultures in gelatin show slight and slowly developing liquefaction.

Pathogenicity.—By experiments on animals exactly the same lesions are produced as those found in man.

Pathologic Anatomy.—The lesions of this infection are widespread. At the point of inoculation there may be found edematous infiltration, with blood-stained fluid, and emphysema due to gas-formation. Rapid necrosis or gangrenous softening of the tissue may occur. The entire surface of the body sometimes becomes emphysematous, and at the autopsy the organs, especially the myocardium, kidneys, liver, and spleen, present a characteristic appearance. They are lighter in color, and on inspection are found to be filled with minute vacuoles or gas-bubbles. The blood of the heart and vessels presents a foamy condition, due to the gas-formation. Practically any of the tissues of the body may be affected. Microscopically, the occurrence of gas-vesicles with numerous bacilli in their walls is the most striking feature.

"Regarding the mode of infection, it seems likely that in all cases the organisms enter through some injury or abrasion connected with

the external world. Some cases have followed traumatic injuries, others occur in connection with disease marked by ulcerations of the surface of mucous membranes, and at least one instance has been carefully studied in which the disease occurred during the puerperium, probably due to uterine infection. It is not improbable that many of the cases of supposed air-embolism from douching of the uterus after labor are in reality cases of this form of infection."

CASE I

This case is reported by Dr. James F. Beck, of this city.

Mrs. Munson called at my office the evening of August 5th with an infection of the right hand, caused by a punctured wound over the thenar eminence, with a history of a fall at 9 a. m. on August 4th, with penetration by some dead twig or root.

She had removed, as she thought, all of the wood from the wound. I washed the wound with a carbolic wash, and wrapped up the hand. She suffered a great deal of pain all that day and night, and came to town the afternoon of August 5th for surgical attention. I found the fingers of the hand contracted, and extension extremely painful, with some swelling about the punctured wound, but no fever.

I opened up the wound thoroughly, and removed bits of punk-wood and dirt, but no pus, and after cleansing it thoroughly put on wet dressing of syzol.

August 6th I was called to the house, the patient having suffered severe pain all night. Found the inflammation increased; temperature 100°; pulse 90. Being convinced that there was pus in hand, I enlarged the original incision, and made two more deep incisions into the hand in the neighborhood of the original puncture, and got some blood and serum, but no pus. There were no red streaks up the arm, but the fingers were still rigidly contracted. Continued the wet dressing. Made another call the evening of August 6th. The pain not quite so severe, and the wounds were discharging serum, but no pus.

Monday, August 7th. Hand about same, made a couple of additional incisions in the hand, finding no pus; temperature 100°; pulse 90. Wet dressings continued.

Tuesday, August 8th. Swelling in hand increased; temperature and pulse about the same. Made additional incisions in the hand; found no pus, and no lymphangitis. In the evening the wrist was swollen somewhat, and the patient was still suffering acute pain. Wet dressings were continued, but the family applied hot flax-seed poultices all that night.

Wednesday, August 9th, 9:30 a. m. Found the patient was suffering no pain, and had passed

a comfortable night, attributing ease to the poultices. Upon examination, however, the cause was apparent, as the forearm was tensely swollen to the elbow, the hand cold, a gangrenous bleb on plantar surface of the thumb, the thumb nail loose and attached to the skin only, and gas was escaping in bubbles from the various incisions. Temperature, 102.5°; pulse, 110. Opened the blebs, removed the skin and nail from thumb, and advised immediate operation to relieve pressure and restore circulation, explaining the grave significance of her condition. Patient refused to go to the hospital until the husband could be found. She was finally removed to the hospital and operated upon August 9th at 4 p. m., at which time the gangrenous condition had increased, involving the index and second finger of the right hand.

The hand and arm were swollen, covered with large blebs, and very dark in color; and gas could be felt in the hand. The skin and superficial fascia was incised over the hand and arm to the elbow, and the tissue thoroughly liberated down to the muscle. It was then washed out with peroxide of hydrogen, and enveloped in wet bichlorid dressing. No improvement occurred, and the patient died the following day.

CASE II

Dr. James Blake, of Hopkins, Minn., reports this case.

Emil Chervený, boy, twelve years of age, of Bohemian parentage, father healthy, mother delicate, suffered from chronic rheumatism for six years. One brother, eight years old, in good health; one sister, fifteen months of age, is healthy. Emil had children's diseases; five years ago had a green-stick fracture of the right radius. Was a tall boy for age and in good health.

On August 8th, at 5 or 6 p. m., he was on the bank of a small lake. His companions went in swimming, while he climbed upon an oak tree on the bank. He fell out of the tree and sustained a fracture of both bones of the left arm in the middle. The radius protruded through the skin. Patient was anesthetized at 8:30 p. m. The wound was cleaned as thoroughly as possible, and drained with sterile, plain gauze and splints applied. I saw him the next day when the bandages on the splint were loosened a little. The fingers were swollen somewhat, and he complained of pain. After the bandages were loosened, most of the pain disappeared. I saw him again at 11 o'clock on August 10th. The arm was swollen and black. The skin was blistered in places like a burn. There was emphysema in all the fingers, hand, forearm, and a little above the elbow, all around the arm; and it extended on the anterior part of the arm almost to his shoulder. Temperature was 101°. He com-

plained of headache, and felt very tired and sleepy. There was no pain in arm except on deep palpation. The arm was amputated at 2:30 p. m., August 10th.

This boy's arm was dark, very badly swollen, and covered with blebs. There was gas to be felt in the tissue above the elbow. In the hope of getting beyond the infection I disarticulated the arm at the shoulder. No gas could be seen or felt at this point after it was opened. He recovered from the shock, and for two days we had hope of his recovery, but on the third day he had some light convulsion and died. The wound and surrounding tissue looked well.

CASE III

The following report is from the records of the Pathological Department of the University of Minnesota, as made by Dr. Mullin:

AUTOPSY

F. P., male, age 56; color, white; August 1, 1905.

Clinical Diagnosis.—Compound fracture of the right thigh with infection with a gas-producing organism, and Colles fracture of the right arm.

Autopsy Diagnosis.—Infection with *B. aerogenes capsulatus of Welch*; compound fracture of the right thigh; Colles fracture of the right arm. Infection has spread throughout the whole system, crepitation being palpable, especially in the right thigh, over the entire abdomen, chest, face and scalp and both upper extremities, but not so marked in the left lower extremity or the right leg and foot.

Height, about 5 feet 7 inches; frame, medium; general nourishment, good; rigor mortis present; lividity present; body much swollen, especially the right thigh. Abdomen much distended and greatly discolored over an area extending in the axillary line to the ninth rib; thence to a point two inches above the pubes to the median line in the back and down the thigh to the knee; two small wounds about two inches above the knee, and a slight abrasion on the left side of the face.

Pleural cavities contain about 3 ounces of bloody fluid; no adhesions.

Pericardial cavity contains about 2 ounces of bloody fluid; no adhesions.

The abdominal cavity shows the stomach, transverse colon, descending colon, and small intestines to be greatly distended with gas.

Lungs are much congested, being of a dark red color; crepitation can be felt throughout; there is no evidence of consolidation of either apex.

Heart about normal in size; muscle somewhat pale and mottled and very friable; wall of right ventricle very thin; valves normal.

Spleen smaller than normal; surface much

wrinkled; shows a good deal of congestion, and crepitation can be felt throughout. Cut surface shows a dark, chocolate-colored substance, very friable.

Kidneys are smaller than normal; cortex thin; pyramids well marked; pale and crepitate throughout.

Scrotum is much discolored and distended with gas to about the size of two fists.

Liver is normal in size; nodules well marked; has a dark slate color. Cut surface shows wide-open veins which emit, on pressure, a frothy fluid; whole organ crepitates throughout.

Bacteriological Examination.—Direct smears from the pericardial fluid taken for examination showed a somewhat thick, capsulated bacillus, slightly larger than bacillus anthracis, with square ends, growing sometimes in chains of two or three, but usually singly. No spores could be demonstrated. Stains by all the ordinary aniline dyes, and retains the stain by Gram's method.

Sowings were made into glucose broth, litmus milk, and on glucose agar and litmus lactose agar. These were grown anaerobically for forty-eight hours. Sowings were also made on blood serum and plain agar, which were grown aerobically for forty-eight hours. The aerobic cultures showed a non-Gram-staining diplococcus, which was not fully identified.

The anaerobic cultures gave the following results:

On slant agar the colonies are rather difficult to describe, being scarcely visible to the naked eye. Gas production was present in all the media to a very marked extent, and the litmus was reddened, showing an acid reaction. Milk was coagulated, and the coagulum riddled with holes. The glucose broth showed a diffuse cloudiness with a slight sediment. Two ccm. of this broth were injected into the marginal vein of a rabbit (animal experiment No. 360), which was then allowed to run about for ten minutes when it was killed by a blow on the back of the neck and left for twenty-four hours at the room temperature. The autopsy on this animal showed it to be greatly distended with gas, which was apparently not only in the abdominal cavity, but could be palpated in any tissue of the animal. On making a small puncture into the abdominal cavity and igniting the escaping gas, it burned the blue flame characteristic of hydrogen. Direct smears showed an organism resembling in every respect that seen in the original material. Gas bubbles were very abundant in all the subcutaneous tissues and muscles of the belly-wall and in all the abdominal organs, the liver being almost completely destroyed by the action of the organism. Inoculations into sugar media with the heart's blood, grown anaerobically, gave the same results as those from the original material.

Cover-slip preparations made from the cultures grown anaerobically show an organism resembling that found in the smears obtained at the autopsy.

Bacteriological Diagnosis.—*Bacillus aërogenes capsulatus* of Welch.

Histological Examination.—Blocks were cut from the liver, kidney, spleen, lung, and heart-wall, all of which showed a very acute and destructive process, which was difficult to identify from the sections of the tissue. This was especially marked in the case of the liver. It was impossible to notice whether or not there had been any previous disease of any of these organs. The organisms could be demonstrated in all these tissues by the Gram-Weigert stain.

DISCUSSION

DR. J. CLARK STEWART (Minneapolis): I am very glad Dr. Little brought this subject before the Association, because, in spite of the very bad results which we have observed in the Northwest with this form of disease, those are not the general results. The general mortality of this disease is about fifty per cent; that means we should save about one-half of our cases, and we can do it only by making early diagnosis. Dr. Little wants to know how to make early diagnosis. The only way is by cover-glass smears of the wound. Every suspicious wound that comes to your care must be examined that way, by staining cover-glass smears from the wound.

There are certain classes of wounds which can have this infection, like dirt-contaminated wounds. If this germ is present it may affect the organism in three distinct ways: One is a general sepsis, an acute, rapid sepsis, killing in twenty-four to thirty-six hours. The second is the form Dr. Little speaks of, emphysematous gangrene; and the third is emphysematous cellulitis.

One of my cases was extravasation of urine with gaseous cellulitis of the abdominal wall. The man was striped by incisions from the pelvis up all over his body. He was a most unfavorable case, and yet he got well.

The treatment of these cases after diagnosis is very well established. This case with the extravasation of urine was a serious one, and the man's recovery was a matter of good fortune.

I think it is important that the profession attempt to recognize these cases earlier and utilize the few points we do know about their treatment.

DR. L. F. SCHMAUSS (Mankato): This is certainly a very vital condition and comes very near in importance to tetanus. It emphasizes the fact that any wound, no matter how small or how insignificant at the time it is presented, should have proper and thorough attention, and should not be neglected. As long as this is not done we shall have to be prepared to get cases of tetanus and cases of this kind of infection. I do not know how this condition could be recognized any earlier, but I am sure it can be prevented, as certainly as tetanus can be prevented, if the wound is accessible, which was the case in the two cases reported. We cannot thoroughly get at all cases of gunshot wounds, but any case of compound fracture or punctured or lacerated wound is accessible, and it is not only necessary that these cases be cleansed and any foreign body removed, but it is also required, in order to prevent

this condition and to prevent tetanus, to disinfect the wound. We can go to work and cleanse and disinfect many cases without local anesthesia, but any extensive wound that goes through the skin ought to be treated under local or general anesthesia. It is easy to take a mild cocaine solution and inject it about the wound, and if this is done and the cleansing and disinfecting carried out thoroughly in ninety-seven cases out of one hundred we will prevent this disease or tetanus and we will save the patient's suffering and loss of time and all the dangers attendant upon these fearful conditions.

I would like to give a history of a case of tetanus that came into my hands last summer. A boy was hurt by a tub having sharp projections falling on his foot. This occurred on Saturday. The wound was washed and the boy taken home and local applications made. The foot began to swell, and on Monday forenoon a physician was called who looked at the wound and said it was all right, and advised the family to put on hot applications and then call him again if necessary. On Friday forenoon I was called in and found the boy exhibiting symptoms of tetanus. I told the friends of the seriousness of the case and insisted on consultation. We gave the boy an intraspinal injection of antitoxin at once, and disinfected the wound. The foot was edematous and there was a large amount of pus collected. From the bottom of the wound I removed a large piece of leather and sock. Of course, it stands to reason that all this ought to have been done on Saturday or, at least, on Monday, when probably the disease could have been prevented. The case terminated fatally the following day. These wounds should be disinfected at once, and we should be prepared to treat these cases thoroughly and efficiently. This cannot be done satisfactorily in most cases without using local or general anesthesia. The most effective disinfectant is 95 per cent carbolic acid followed by 95 per cent alcohol.

DR. W. H. MAGIE (Duluth): I am glad to hear this talk about the pathology of an anaerobic cellulitis. My first case occurred about twelve years ago. It was the case of a railroad man who had alighted from a passenger coach, causing a fracture of the tibia near the ankle joint. He was taken to the hospital and treated in the usual way under chloroform and irrigation of bichloride of mercury solution, 1-1000. The ankle was dressed with ordinary metal splints. The patient got along nicely for three or four days, until one morning pain developed in the leg which he had not had before. I was called to the hospital at eight o'clock in the morning. I took off the splints and found that crepitation in the soft parts was present, and his temperature was 104°. I was not prepared to make an amputation, went to my office for assistants, and before I got back emphysema reached above the knee. I amputated the thigh at the upper third, but the man died within twenty-four hours, the emphysema extending as high as his arm-pit before his death.

The next case was that of a man who was dragged under a wheel and who had an injury of the leg. He developed emphysematous cellulitis. His temperature did not go very high, but the emphysema spread over a considerable surface of the tibia. This case recovered. Last winter a man was admitted to St. Mary's Hospital with a gunshot wound. It developed into a case of emphysematous cellulitis and extended practically all over his body, and he died within forty-eight hours. These were three cases of so-called emphysematous gangrene that I have had experience with, and, as I said, the first one occurred a good many years ago and died promptly, the temperature reaching 106° before death. In an hour or two the emphysema had ex-

tended from the ankle to above the knee, and in the next two hours it extended to the arm-pit. There were no smears made of that case, but in the last two cases they were made and the pathogenic germs were found.

DR. J. H. HARRIS (Stillwater): A man fell from the bluff in the night and fractured his right thigh. He was taken to the hospital and a compound fracture was found, but there was no indication or suspicion of any infection. The wound was thoroughly cleaned by the usual method, and he seemed to be in good condition, with a temperature of 100° to 100.5°. I saw him the next morning, and he seemed to be in good condition. I had no fear of the result, but at three o'clock in the afternoon the nurse telephoned me that he began to complain of pain and the pulse was weak. I reached the hospital at half past three, and found him in a state of collapse. I applied stimulants, and removed the dressing and found a gangrenous condition that extended up above the knee, and the swelling extended over a large part of the body. At five o'clock the man was dead. At that time the swelling had extended almost over the whole body, in the left leg, and even in the right arm. I telephoned over to the laboratory and had Dr. Stewart come over and make a post-mortem.

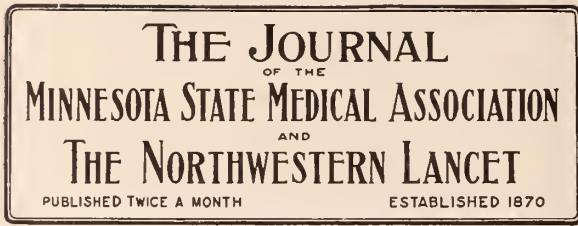
DR. J. W. LITTLE (Essayist): In regard to the disinfection of the cases, I neglected to state in the report that the doctor did not say exactly how he disinfected. He simply said he anesthetized the boy and disinfected the wound. The way he did it was with carbolic acid, followed with alcohol. In a compound fracture I do not see how he could have done better. There can be no criticism so far as Dr. Blake is concerned. He anesthetized the boy as soon as he reached the home, and disinfected the wound with carbolic acid, followed with alcohol, which is the best he could possibly have done.

In most of these cases they have no fever, certainly no fever to begin with. The temperature is not an indication of the serious condition. It is only in the later stages that most of them have a high temperature. Dr. Magie's case seems to be an exception. He said the temperature was 104° very soon after the injury.

I am glad to give my friend from Stillwater credit in the case, but I did not know who took care of the patient previously. I am glad to hear of Dr. Magie's cases, and it only shows how many cases there are about the country, and we know nothing of them. I had no way of finding out who had experience in these cases. Previously we had five cases, and he has added three to the list. (Applause.)

TWO DESIRABLE REFORMS

C. M. Jackson, Columbia, Mo. (Journal A. M. A., August 25), advocates the requirements of a thesis based on genuine research work, as an essential for obtaining the medical degree. A student deserving the diploma of a first-class medical school ought to be capable of doing some original investigation at the time he graduates. Another thing is that state examining boards make their examination more practical. Instead of merely answering a series of written or printed questions, he would have them require the candidate to show his ability in diagnosis and treatment of diseased conditions. While such examinations would be more lengthy and expensive than those made at present, the adoption of such a system would be of the utmost value to the medical profession.



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FIGHTING TUBERCULOSIS

The effort made to stamp out tuberculosis is meeting with encouragement in all parts of the country.

The National Congress, which meets in New York in November, has the sanction of the government, the state organizations have interested non-medical men, and the local antituberculosis societies are doing their share in the general campaign of education. The only discouraging feature in the local organization is the lack of funds to care for acute cases. The people are gradually awakening to the dangers of the situation, but they have not yet learned to open their purses. The establishment of a camp and, later, a sanitarium in Minneapolis by the Christian family shows the proper spirit, and we hope this spirit may be contagious. Some opposition has developed to the establishment of the camp near the river by a few scattering families, but nothing will prevent the carrying out of the original plans.

The Minnesota State Board of Health has formulated instructions for the use of the physicians, and has asked their co-operation in securing information for the department of vital statistics. All of this is educational, and, although there may

be objectors and delinquents among the profession, it will be possible to compile a census of all tubercular cases in the state after the methods are studied.

The country physician objects to the filing of blanks for the State Board, partly on the ground that it is an annoyance and consumes too much time, but particularly on the ground that he sees the patient only occasionally and the blanks are forgotten. All of the details will be gradually worked out, and as the executive office of the State Board is able to keep a line on communicable diseases it will require a little urging on his part to gain the desired information.

THE JOURNAL-LANCET publishes in this issue the information blanks for tuberculosis and other communicable diseases, and also an article by Dr. Bracken, which give valuable information and should arouse all physicians to a sense of their duty. Physicians all over the state are urged to maintain an interest and to assist the Board in every possible way. The Board has power to demand detailed information when it is required, but it should not be necessary to make a *demand* upon medical men.

The circulars that have been prepared by the Board are the result of the experience gained in all parts of the world in this important work, and the Board has not been unmindful of the physicians' patience and time in its requirements, and so we urge our readers to study these circulars, to use them, and to give the Board the most cordial co-operation.

The free examination of sputum, enabling every physician to make an almost positive diagnosis, should commend itself to the profession.

The Commissioner of Health in Pennsylvania is pushing the educational campaign vigorously, and the response from the profession and the public is very gratifying. Minnesota must continue to be among the first to promote the public health. Its laws are broad and powerful, and will be executed. All vital statistic blanks are to be regarded as confidential communications to be kept on file in the State Capitol, and they cannot be used as public documents, nor will they be exposed in any way for the benefit of the curious.

HONOR TO DR. W. J. MAYO

The meeting of the British Medical Association, held in Toronto, Ontario, Aug. 21-25, 1906, was an unusually attractive meeting.

A large number of Americans were present from distant cities. Minnesota was represented by several of the leading surgeons and physicians, as noted in our news columns.

The Senate of Toronto University conferred the honorary degree of doctor of laws on the following visitors and delegates: Dr. W. J. Mayo, Rochester, Minn., president of the American Medical Association; Dr. Louis Lapique, Paris; Prof. Dr. L. Aschoff, Freiburg, Germany; Sir Thomas Clifford Allbutt, Cambridge; Dr. A. H. Freeland Barbour, Edinburgh; Sir William Broadbent, M. D., London; Sir Thomas Barlow, M. D., London; Sir James Barr, M. D., Liverpool; Dr. Henry William Langley Brown, West Bromwich, chairman of the council of the British Medical Association; Mr. George Cooper Franklin, F. R. C. S., Leicester, past-president of the British Medical Association; Dr. W. Dobinson, Halliburton, London; Sir Victor Horsley, F. R. C. S., London; Dr. Donald McAlister, Cambridge, president of the British Medical Council, and Sir William Julius Mickle, London.

Such an array of well known names would excite the admiration and enthusiasm of the medical profession anywhere. It is a great honor to receive the degree of doctor of laws conferred by a Canadian University, and it is a greater honor for Minnesota to be able to claim the only American candidate as a resident of this state. The degree did not come to Dr. W. J. Mayo simply because he was President of the American Medical Association, but was in recognition of his scientific work and merit in the field of surgery.

Dr. W. J. Mayo is an exceedingly generous and broad minded man, and in receiving his degree he undoubtedly shared in his mind his triumphs with his brother Dr. C. H. Mayo, who has been so closely associated with him. Medical men who have visited the Rochester clinic appreciate the worth of the two brothers, and will share in the applause that is so liberally bestowed upon them.

It is very evident that the work of Dr. W. J. Mayo is warmly appreciated by the British Medical Association, as is shown when the list is carefully scrutinized. The names of older men who have been famous for many years appear with Dr. Mayo who is still a young man.

The conference of the degree at this time and with such celebrities is extremely significant.

G. A. R. WEEK

The medical care of the veterans and visitors during the week of the Encampment under the direction of Dr. Charles A. McCollom was a noteworthy attainment. From various parts of the country the newspapers have called attention to the manner in which work done for the health

and medical comfort of the visitors was carried out. A thorough system was inaugurated, and each of the 150 physicians who donated their time and services was constantly in evidence. On the day of the great parade the Red Cross and Ambulance Corps demonstrated to the complete satisfaction of everyone the value of the automobile over the horse-drawn vehicle. The service was quick, safe, and comfortable.

Experiments have shown that the gasoline machine of reliable make is more dependable than any other form of conveyance. The ambulance can be driven over any kind of roads, if a long wheel-base is used, and with less discomfort to the invalid on account of pneumatic tires and long springs. On good roads the service will cut the old-time methods in two, and, in the end, will be cheaper and in every way more efficient.

IN THE DEPTHS

Can a newspaper prostitute its columns any further than when it publishes as pure reading matter such a notice as the subjoined clipping, which appeared in a St. Paul daily a short time ago? It no doubt would have appeared in a Minneapolis paper had the distinguished Mr. Seeley seen fit to pay the price.

It may be said that the fraud is perfectly apparent, and that no one need be fooled by such notices as this. That may be true, but a publisher who accepts the notice knows that some person of much less than ordinary intelligence may be fooled by it, and fooled not only to his financial loss, but possibly to his great physical detriment, and thus his course becomes little short of infamous.

There are some things that ought not be trafficked in, and among them are health, honor and virtue; and it is time that the daily press put some limitation, even other than that of pure morals, upon its advertising pages.

The following is the notice, which, as stated above, appears as pure reading matter:

NOTED RUPTURE SPECIALIST HERE

Seeley, Who Treated Czar of Russia, Is Called to St. Paul

F. H. Seeley, of Chicago and Philadelphia, the noted specialist, is at the Rvan Hotel, and will be in the city for a few days only as expert witness in a railroad damage case.

Mr. Seeley is the man who a few years ago received a call to St. Petersburg to wait upon the czar of Russia. He said:

"With the latest improved truss and advanced method, we retain any case of hernia at once, and close the opening in 10 days on the average case."

Mr. Seeley says if any interested persons call during his stay he will be glad to help them without charge.

Soon after writing the above we found Mr. Seeley's notice in a Minneapolis paper, and, we regret to say, it was the Evening Journal, which we have praised in these columns for its manly stand against the disreputable medical advertisers, who no longer have access to The Journal's advertising pages.

The editor of The Journal may not know whether Mr. Seeley can cure hernia, or cancer, or locomotor ataxia; but the editor does know

that such advertising clearly indicates fraud, and he himself would have nothing to do with such a man. If this be true, why help Mr. Seeley to catch and fleece the weaker minded men and women who are afflicted with this or that disease which may be curable at the hands of scientific men who are ever ready to treat the poor, however great their need and numbers, without pay? Oh, the pity of it!

CIRCULARS RELATING TO TUBERCULOSIS

ISSUED BY THE STATE BOARD OF HEALTH

In connection with the new Regulations of the Minnesota State Board of Health, requiring the reporting of all cases of tuberculosis and providing for the free inspection of sputum, the following circulars have been prepared for distribution. These circulars can be obtained at any time by parties desiring the same for use and distribution by writing to the Secretary of the Minnesota State Board of Health. In writing for a circular, its number should be indicated.

Circular No. 1

TO THE PHYSICIANS

The Minnesota State Board of Health, at its meeting January 12, 1904, advised that all cases of tuberculosis throughout the state should be reported to the Board by the attending physicians. This advice was given in order that physicians might take advantage of the laboratory of the Board as an aid in the diagnosis of this disease, and of the literature prepared by the Board for distribution by physicians to tuberculous patients or members of their families.

Are you willing to aid in the suppression of tuberculosis in Minnesota? If so, the following is an outline of the task before you:

1. Examine all possible cases of tuberculosis carefully and do not allow any such under your care to pass from the incipient or curable stage into the advanced or incurable stage without having used all possible means known to science for the cure or arrest of the disease.

2. Keep a careful record of all well recognized or suspicious tuberculous cases under your care (a) for your own special benefit and (b) as an aid to sanitary authorities in the control and suppression of this disease.

3. Report all your cases of tuberculosis to the Minnesota State Board of Health on cards furnished (on request from you) for that purpose.

4. Use the laboratory of the State Board of Health as an aid in the diagnosis of this disease. This you can do without any expense,

provided you furnish certain information relating to the case to the Minnesota State Board of Health at Minneapolis and that you use the information gained by the laboratory findings as an aid in the control of the disease, and not simply as an aid to diagnosis.

5. Instruct your patients as to the curability of this disease and impress upon them the necessity of following your directions. Also instruct them in the sanitary requirements laid down by the State Board of Health for their own benefit and for the protection of their relatives and friends.

6. Instruct your patients as to the infectious nature of this disease and the necessary precautions to be taken in order to protect others from infection.

7. Recognize the fact that a tuberculous patient should be informed *early* as to the nature of the disease from which he or she is suffering, in order that its curability, if proper care is taken during the incipient stages, may be impressed upon him.

8. Supplement your own advice and suggestions by distributing the literature bearing upon this subject which is furnished by the Minnesota State Board of Health free of charge. You can secure such literature at any time by writing to the Secretary of the Board. The use of such literature may often protect you from a suspicion on the part of patients that you are placing undue stress upon the disease and its dangers to themselves and others.

9. Use every possible opportunity to impress upon the public the curability of tuberculosis and the absence of danger to others if the disease is properly cared for.

10. Encourage the establishment of sanatoria for the care of the early cases and hospitals for the care of the advanced cases.

11. Encourage the employment of district nurses to visit the homes of the tuberculous when such cases are under treatment at home, in order

that these patients may be under constant supervision and instruction.

12. Encourage the organization and work of antituberculosis societies.

13. Insist upon the enforcement of the sanitary regulations and local ordinances bearing upon the control of this disease.

Note.—Physicians residing in cities where the local sanitary regulations require the reporting of tuberculous cases and provide for the sanitary supervision of such, should report to the municipal sanitary authorities instead of to the State Board of Health. In such cases the local sanitary authorities shall make a monthly report to the State Board of Health of all tuberculous cases reported to them.

Circular No. 2

TO THE PATIENT

Are you willing to aid in the suppression of tuberculosis in Minnesota? If so, keep the following points in mind:

Consumption is a disease of the lungs which is taken from others and is not simply caused by colds, although a cold may make it easier to contract the disease.

Consumption is caused by germs, which usually enter the body with the air breathed.

The matter which consumptives cough or spit up contains the germs of consumption in great numbers. Frequently millions are discharged in a single day. This matter, if spat upon the floor, walls, or elsewhere, dries, and is apt to become powdered and float in the air as dust. Dust containing these germs may enter the body of any one breathing this air.

Infected dust in a house is especially dangerous to the occupants of the house.

A well person contracts this disease only by, in some way, taking in the infected matter coughed up by a consumptive.

Consumption is a curable disease if recognized early and if proper means are taken for its treatment. In the majority of cases it is not a fatal disease.

A well person may safely live with a consumptive if the matter coughed up by the consumptive is promptly and completely destroyed.

The best way to destroy sputum is to burn it.

Sputum should not be spat upon the floor, carpet, stove, walls, sidewalk, or elsewhere except into a cup, flask, napkin, or handkerchief used especially for that purpose.

If a cup or flask is used to receive sputum, such receptacle should contain a small amount of some disinfecting solution*. Such a solution will kill the germs of the disease.

*A 3 per cent solution of carbolic acid in water (about 4 teaspoonfuls of carbolic acid in a pint of water) is well suited for this purpose.

The cup or flask used for this purpose should be emptied at least twice a day and carefully washed with *boiling* water.

Paper cups are better than metal or glass cups or flasks because they can be burned with their contents. They should be burned every day.

Sick persons who are walking about where they cannot carry sputum cups should spit into a Japanese paper napkin and put it at once into a water-proof pocket. This napkin should be used only once. A supply of fresh clean napkins should always be within easy reach. The paper napkins which have been used should be burned daily.

Paper napkins are much better than handkerchiefs or rags for spitting into, for they are used but once and there is therefore less danger of soiling the hands with the sputum.

A basin of disinfecting solution* should be made fresh every day and kept in some convenient place in order that the patient may dip the hands whenever they are suspected of being soiled with sputum.

If sputum accidentally gets on the floor, clothing, or furniture, it should immediately be washed off with some of the disinfecting solution.

The hands of tuberculous patients should be washed frequently with soap and water.

Tuberculous patients who cook or prepare food should take especial care to keep the hands clean.

If the matter coughed up be promptly and properly destroyed, consumptives may frequently do their usual work without giving the disease to others, and at the same time improve their own condition and increase their chances of getting well.

Men with consumption should not wear beards or mustaches.

A consumptive should sleep alone and, if possible, in a separate room. The room should always have an abundance of fresh air. The windows in the room should be open day and night. The patient's soiled washable clothing and bed linen should be handled as little as possible when dry, and should be placed in water until ready for washing. It should then be boiled for at least half an hour before being mixed with clothing belonging to other persons.

Rooms which have been occupied by a consumptive should be thoroughly disinfected, scrubbed and whitewashed, painted, or papered before they are occupied by other individuals. Carpets, rugs, bedding, etc., from rooms which have been occupied by a consumptive should be burned or thoroughly disinfected.

Towels, pipes, clothing, drinking cups, glasses, handkerchiefs, and other personal articles used by consumptives should not be used in common

by other members of the family.

Deaths due to consumption following one another closely in a family are the result of infection due to the close association of the diseased with the healthy.

A clean, conscientious consumptive is not a menace to the public so long as proper means are taken to control and destroy the tubercle bacilli coming from such patient.

A consumptive should remember that the most important part of the treatment of the disease is *FRESH AIR, REST, AND FOOD.*

If you suspect that you have consumption, if you are losing weight, if your appetite is poor, if you are coughing, if you feel tired all the time, go to your physician for advice at once.

Don't spend your money for so-called consumption cures.

You can be cured if you begin the treatment of your disease early enough.

If you are a consumptive the cure is largely in your own hands. Be governed by the following suggestions:

Don't live in rooms where there is no fresh air.

Don't work in rooms where there is no fresh air.

Don't sleep in rooms where there is no fresh air.

Stay out of doors all you can.

Don't be afraid of cold air.

Remember that sunshine kills the germs of consumption.

Go to bed early. Sleep at least eight hours.

If you have to work, rest all you can while at home.

Don't worry. Worrying is not resting.

Eat all the good, plain, nourishing food that you can.

Raw eggs and milk are important articles of diet.

Drink plenty of pure water.

Don't drink beer, whiskey, or other alcoholics.

Your most important duty is to get well. Let all other duties be secondary to this.

Circular No. 3

THE CARE OF THE SICK-ROOM OF THE TUBERCULOUS

(To be distributed by physicians to tuberculous patients and others.)

Young children should not be allowed to play in the sick-room of members of the household having any disease of the lungs. Children should be absolutely prohibited from playing on the floor of the sick-room.

Personal cleanliness of a tuberculous individual is extremely important. This is especially true of those in the advanced stages of the disease.

The room for a tuberculous patient should be

carefully chosen and equipped. It should have a southern exposure if possible. Painted or whitewashed walls are better than paper walls. The furniture should be plain and without upholstery. If cushions are used on chairs or couches they should be covered with washable material, which should be frequently laundered, or with cheap goods, which should be destroyed and replaced from time to time. The bed-clothing should all be of washable material. Quilted coverings should not be used.

From time to time the room should be disinfected with formaldehyde gas, and the furniture and woodwork should be wiped off thoroughly with a disinfecting solution*. The floor should be washed quite frequently with a hot soda-lye solution. The floor should be bare or covered with rugs that can be easily disinfected by washing.

Heavy curtains should not be permitted in the room. Curtains of washable material may be used over the windows. Roller shades are not objectionable unless they exclude too much sunlight.

The room should not be dry-swept or dusted. Remove the dust from the furniture, etc., with a cloth wet with a disinfecting solution*.

The windows of the room should be kept open as much as possible.

The cardinal principles to be observed in the sick-room of a tuberculous patient are *CARE OF THE SPUTUM, CLEANLINESS, SUNLIGHT, AND FRESH AIR.*

The washable clothing of a tuberculous patient should be placed in a disinfecting solution* at once upon removal from the room.

After the removal of a tuberculous patient from a room, it and its contents should be thoroughly disinfected and cleaned. (See special circular on disinfection.)

The apartments occupied by a tuberculous patient should be deemed infected, and when vacated by death or removal of the patient it is the duty of the householder, physician, or other person having knowledge of the facts, to notify the local board of health at once, in order that said apartments and contents may be properly disinfected. (See Sanitary Regulation, No. 43.)

Any person who lets for hire, or causes or permits any one to occupy, apartments previously occupied by a tuberculous patient before such apartments have been properly disinfected, is guilty of a misdemeanor and subject to punishment. (See Sanitary Regulation, No. 8.)

*A 3 per cent solution of carbolic acid in water (about 4 teaspoonfuls of carbolic acid in a pint of water) is well suited for this purpose.

Circular No. 4

TO THE GENERAL PUBLIC

Are you willing to aid in the suppression of consumption in Minnesota?

Remember that more people die from this disease in Minnesota than from any other.

Of 18,110 deaths in Minnesota in 1905, 1,936 were due to consumption. Valuing a human life at \$5,000, this meant an actual loss to the state of about \$10,000,000 in one year as a result of this disease.

The care of those ill with this disease during the same year, but not dying, would amount to at least another \$5,000,000.

You should fight against this disease because, sooner or later, it may enter your own family.

You should fight against it because, while a most dangerous disease, it is easily controlled.

See to it that local organizations are established, in order that proper provision may be made for the care of those suffering from this disease.

See to it that the mild cases are so provided for that they are given an opportunity to recover.

See to it that severe cases are so provided for that they shall not be a source of danger to the uninfected.

See to it that your county, municipal, and sanitary authorities are supported in their efforts to suppress and stamp out this disease.

See to it that proper local regulations bearing upon the control of this disease are passed and enforced.

See to it that your sanitary authorities, if indifferent in this matter, are urged to the full performance of their duties in dealing with this disease.

See to it that physicians in your community are aided in the early recognition and proper supervision of this disease.

See to it that any suspicious cases coming under your supervision receive early attention.

Be ever on your guard against this disease in your homes, in the schools, in factories and shops, and in all business places.

Circular No. 5

TO THOSE INTERESTED IN SCHOOLS

Are you willing to aid in the control of consumption? If so, see to it that those suffering from this disease are not employed as teachers.

1. Because they cannot hope to recover while following such an occupation.

2. Because they are a menace to the school children under their care.

See to it that children suffering from this disease are excluded from school.

1. Because their recovery is not probable if they are kept under the strain of school life.

2. Because the importance of fresh air, rest, and good food is even greater for the growing child than for adults, and the child attending school does not get the necessary amount of any of these.

3. Because close confinement in school may be followed by other forms of tuberculosis than consumption and may cause permanent deformities or death.

4. Because school children with consumption (pulmonary tuberculosis) are a decided menace to their associates.

5. Because by excluding them from school and allowing them to recover and at the same time preventing the infection of others, many lives of value to the state will certainly be saved.

Circular No. 6

DISINFECTION

By disinfection is meant the destruction of all infectious material. In tuberculosis the infectious agent (the bacillus tuberculosis) is found in the discharges from the parts affected. In pulmonary tuberculosis the infection is in the expectorated matter which is coughed up by the patient. In intestinal tuberculosis the infection is in the discharges from the bowels. In tuberculosis of the urinary tract the infection is in the urine. In tuberculosis of the glands or bones the infection is in the pus which may be discharged from the infected part or parts.

A patient having pulmonary tuberculosis in the advanced stage is very apt to have an extension of the disease to other parts or organs. In all advanced cases of pulmonary tuberculosis, therefore, the bowel discharges and the urine should be disinfected, as well as the matter coughed up.

Not only should all tuberculous discharges be disinfected, but everything that may become soiled in any way with such discharges.

Under disinfection we must consider the following points:

1. *The sputum.*—This should be collected in paper sputum-cups or paper napkins, and burned before it has an opportunity to become dry. (See Special Circular "To the Patient.")

2. *The Stools.*—All discharges from the bowels of advanced pulmonary tuberculosis cases, as also the stools of those suffering from intestinal tuberculosis, should be disinfected. This can best be accomplished by allowing the stools to stand for a sufficient length of time, one hour, in a solution of "milk of lime." This consists of one part slaked lime with eight parts of water. A fresh supply should be prepared each day. Of this, one part of "milk of lime" to ten parts of water should be placed in the vessel to receive the stools.

3. *Surgical Dressings.*—These should be carefully collected as removed from infected parts and destroyed by burning.

4. *Clothing and Bedding.*—Washable personal clothing and bedding should be placed for a time, after having been used, in a five per cent watery solution of carbolic acid, or other equally efficient disinfectant. These articles should then be removed and placed in boiling water where they should be kept for at least half an hour. If more convenient, washable clothing and bedding may be disinfected by placing directly in boiling water without the previous use of the antiseptic solution.

Non-washable clothing or bedding may be disinfected by placing the same in a tightly closed box or closet and subjecting it to formaldehyde gas.

5. *Personal Disinfection.*—This embodies chiefly the extreme of personal cleanliness. It includes, however, the use of disinfecting solutions for the cleansing of soiled portions of the body, as, for example, the use of a weak solution of carbolic acid or other equally efficient antiseptic for the cleansing of the hands or face, or any part of the body which may become soiled with infectious material.

6. *Drinking Cups, Glasses, Dishes, Etc.*—These articles after having been used by a tuberculous patient should be placed in a weak solution of carbolic acid or other equally efficient disinfectant until they can be thoroughly cleansed with soap and boiling water.

7. *The Room of Patient.*—This should be disinfected in the first instance with formaldehyde. After the formaldehyde disinfection all articles in the room should receive further treatment. Furniture that will bear washing with an antiseptic solution should be so disinfected. The woodwork in the room and the floor should also be thoroughly cleansed.

NEWS ITEMS

Dr. D. R. Ivey, of La Crosse, Ind., has located in Max, N. D.

Dr. Frank J. Blackmer, of Albert Lea, has located in Alden.

Dr. Karl A. Danielson, of Twin Valley, has located in Litchfield.

Dr. Harry O. Richey, of Bottineau, N. D., died last month, of typhoid fever.

Dr. A. E. Johnson, of Red Wing, is doing post-graduate work in Chicago.

Dr. M. L. Goldberg, a Hamline graduate, has moved from Henderson to Madelia.

Dr. R. K. Saerheim has moved from Carpio, N. D., to the new village of Epping, N. D.

Dr. Emilie R. Moris, of Duluth, was married in August to Mr. W. H. Cole, of Duluth.

Dr. R. S. Steeson, of Harrisburg, S. D., has been doing post-graduate work in Chicago.

Dr. O. N. Parker, of Ely, was married last month to Miss Mabelle Schroer, of Winona.

Dr. H. L. Lamb, of Sauk Centre, is doing special work in the Post-Graduate Hospital of Chicago.

Dr. C. F. Lewis, of Austin, has returned from Chicago, where he has been doing post-graduate work.

Dr. A. F. Blomberg, of St. Hilaire, will take an extended course of post-graduate work in Europe.

Dr. George W. Johnson, of Maquokota, Iowa, has purchased the hospital of Dr. Pence, of Balfour, N. D.

Dr. O. T. Platt, of Cook, Neb., has moved to Granville, N. D., and become associated with Dr. Davies, of that place.

Dr. Frank P. Norton will succeed Dr. Henry O'Keefe at Minto, N. D., the latter having moved to Grand Forks, N. D.

Dr. J. H. Higgins has resumed practice at Rockford after an extended course of post-graduate work in Chicago.

Dr. A. T. Rowe, son of Dr. H. J. Rowe, of Casselton, N. D., has formed a partnership with Dr. R. B. Webb, of Larimore, N. D.

Dr. H. Z. Griffin, assistant to Dr. Christopher Graham, of Rochester, was married last month to Miss Mary E. Nace, of Lansdowne, Pa.

Dr. E. W. Goldman has moved from Wentworth, S. D., to Madison, in the same state, and entered into partnership with Dr. Daniels.

Dr. L. H. Kermott, of Granville, N. D., has been appointed railway physician of the Great Northern, and will reside in Minot, N. D.

Dr. F. H. Lexa, a recent graduate of the Col. of P. and S., Chicago, has formed a partnership with Dr. John Landenberger, of New Prague.

Dr. Leonard Jacobson, of Luverne, has been appointed ship surgeon on the steamer Dakota, one of the fine new passenger steamers on the Pacific.

Dr. C. G. Slagle, of Minneapolis, died on August 27th. Dr. Slagle graduated in 1861 from the University of Louisville, and thus had practiced nearly half a century.

Dr. E. T. Sanderson, a recent graduate of the Bennet Medical School, of Chicago, has begun practice in partnership with his father, Dr. S. E. Sanderson, of Minnesota.

Dr. Josephine S. Lindstrom, a 1903 graduate of the State University, now of Oberon, N. D., was married last month to Mr. Robert Stickelberger, of the same place.

The joint meeting of the society of the First Councilor District will be held at Moorhead, Monday, Sept. 24th, instead of on the 27th, as stated in our last issue.

Dr. E. A. Riley, who has practiced several years in Willow River, has given up practice at that place, and will take an extended post-graduate course in Chicago, at Rush.

Dr. R. C. Bank, formerly of Owatonna, died on September 1st at Pine Island. Dr. Bank was a pioneer doctor of the old school, and will long be remembered by a host of warm friends.

Dr. Robert Williams, of Alden, has sold his practice to Dr. James Christiansen. Dr. Williams will devote considerable time to special work in Chicago, and will then seek a new location.

Drs. Mayo, Graham, and Judd, of Rochester, are soon to have new and commodious office quarters. An addition to the Masonic Temple, of that place, will be built for their exclusive use.

The Hennepin County Society meets on Oct. 1, and will have a symposium on Graves' disease, Dr. S. Marx White will speak of its etiology and pathology, Dr. J. W. Bell on its diagnosis and treatment, Dr. J. W. Little on its surgical treatment.

Dr. R. W. Pence has moved from Balfour, N. D., to Minto, N. D., having sold his hospital at Balfour. The citizens of Balfour appreciated Dr. Pence's work, and when he left a handsome farewell reception, with an appropriate gift, was given and largely attended.

A special meeting of the Hennepin County Medical Society was called in the office of Dr. J. W. Bell on Aug. 28th, to take suitable action upon the death of Dr. C. G. Slagle. A motion was passed that the society attend the funeral in a body, and a committee was appointed to obtain a suitable floral tribute, and also to draw up resolutions. The committee consisted of Drs. Bell, Dunsmoor, Stuart, Nye, Murdock, Norred, and Barton.

The meeting of the British Medical Association, held at Toronto last month, was attended by quite a large number of medical men of the Northwest, all of whose names we are unable to give. The list includes Dr. W. J. Mayo, of Rochester; Dr. E. P. Quain, of Bismarck, N. D.; Drs. G. W. Chamberlin, J. T. Christison, W. A. Dennis, and A. J. Gillette, of St. Paul; Drs. Emil Geist, Thos. E. Lee, and Prof. F. F. Wesbrook, of Minneapolis. Dr. Lee read a paper before the Anatomical Section, and Dr. H. W. Hill prepared a paper for the Public Health Section, which was read by Dr. Wesbrook, Dr. Hill not being present.

Minneapolis and its medical profession are to be congratulated on a new hospital which this city is to have. Dr. George G. Eitel is having plans drawn for a 50-bed hospital to be known as the Loring Park Hospital. It will be located within a block of the Emerson school building, and will overlook Loring Park. Architect Lowell A. Lamoreaux, who designed the City Hospital, is drawing the plans, with instructions to make the building as complete as any hospital building in the world of its size. The building will be three stories with a high basement, and so designed that two more stories may be added when needed. The foundation will be put in this fall.

The Western Surgical and Gynecological Association met in Salt Lake City on the last two days of August and the first day of September. Resident physicians of Salt Lake who were not members of the Association joined the reception committee in their efforts, successful in largest measure, to give the visitors the best time on record. Every member of the Association was daily taken to luncheon at one of the city's finest clubs; a special organ recital was given in the Mormon Temple; Col. and Mrs. Holmes opened their palatial mansion and art gallery for a reception; an afternoon was spent at Saltair, the fashionable bathing resort on the Lake, where everything was free; automobile rides; and not a few other things made the visit delightful for the physicians and their wives. Dr. A. T. Mann, of Minneapolis, was re-elected secretary and treasurer, and Dr. Charles W. Oviatt, of Oshkosh, Wis., was elected president for the ensuing year. The next meeting will be held in St. Louis in December, 1907.

NOTICE.—A man with various aliases and without authority, is taking subscription to Surgery, Gynecology, and Obstetrics, and of course collects the subscription price, but does not report to the publisher. If you see him, notify Dr. Franklin H. Martin, Chicago, the managing editor of the above journal.



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CARDIOSPASM, WITH REPORT OF CASES*

BY H. S. PLUMMER, M. D.

ROCHESTER, MINN.

While the purpose of this paper is to report the following cases of cardiospasm with special reference to the treatment, so little attention has been paid the subject by American clinicians that a brief general consideration seems desirable.

CASES 1, 2, 3, AND 4

A number of years ago three cases were operated upon at St. Mary's Hospital for stenosis of the esophagus. The cause of the stenosis was unrecognized at the time, but in each instance the condition of the patient warranted a gastrostomy. After the operation, periods of feeding by the mouth alternated with periods of introducing food through the gastrostomy opening. As would be expected, the lower opening was resorted to only when the cardia refused to pass food. One case completely recovered. Two were finally lost sight of, but not until sufficient time had passed to exclude malignancy. It is possible that gastrostomy would have given more favorable results had the true nature of the condition been recognized and the esophagus given longer periods of rest. A fourth case was afforded much relief for several years by frequent passage of a large bougie.

Sufficient data were not recorded to make a detailed report of these cases, but an effort is being made to trace them, and they are introduced into this series with the hope that they may be made use of later.

CASE 5

A. S. T., female, aged 58, married, never pregnant, was first examined August 6, 1905. She states that she had perfect health until the onset of the present trouble. Periodic dysphagia began four and one-half years ago. During the last three years the trouble has been practically continuous. Painful spasms occur while at the table, though not as frequently as in the first year. The greater part of the food is regurgitated soon after eating. Lost fifty pounds in weight. Stomach-tube will enter the stomach only after repeated attempts, but a large sound is easily passed. A radiograph shows a large cylindrical dilatation of the esophagus, three inches in diameter, extending from the diaphragm to the upper border of the sternum.

Diagnosis.—Dilated esophagus, due to cardiospasm.

August 5, 1905, gastrostomy and dilatation of the cardia (Mikulicz method) was done by Dr. W. J. Mayo. This gave immediate relief. Four months later the dysphagia returned, but has been less annoying than previous to the operation.

CASE 6

C. J., male, 18 years of age; past history, negative except for diseases of childhood. First examined October 24, 1905. Three months ago he was taken with "hiccough" while eating. This came on with every meal for two weeks, then began regurgitation of food two or three seconds after swallowed, and, within a few weeks, to

*Read before the Minnesota State Medical Association, June 19-21, 1906.

the immediate regurgitation was added so-called vomiting from one to four hours after eating. Three to six ounces of food mixed with mucus is frequently ejected at one time. It is never sour. There are occasional periods of a few days when he is entirely free from the trouble. He has lost twenty-four pounds in the last six weeks, is a poorly nourished, sparsely built boy; otherwise the general physical examination shows nothing of special interest. The regurgitated food is slightly alkaline in reaction.

In passing a large sound the position of the cardia can scarcely be detected, while the stomach-tube passes only when stiffened with a wire stylet. Size, position, and contents of stomach found to be normal. Radiographs show a dilated esophagus one and one-half inches in diameter, extending from the diaphragm to the third dorsal vertebra. On January 28 and February 6, 1906, the cardia was dilated with the rubber balloon-dilator. Complete relief followed the first treatment.

CASE 7

E. E., male, single, aged 29 years; farmer, does not come of a neurotic family. Examined September 28, 1905. Up to three years ago he had perfect health; at this time he began "vomiting." During the first year the periods of dysphagia might be confined to a single meal, the intervals varying from one to fourteen days. The difficulty in keeping food down gradually became more constant, until within the last eighteen months he has not been free from difficulty in swallowing for more than three days at a time. The food either stays down or comes up immediately after swallowed. While eating he waits for each portion to enter the stomach before attempting the next. At any time during, and always before the meal is completed the opening into the stomach seems to refuse to pass food. He is seldom able to satisfy his appetite, the extreme hunger being the most distressing of his complaints. All statements of the patient indicate that food is never retained in the esophagus. Since the first few months the spasm has been unaccompanied by pain. He has lost weight, falling from 160 to 129 pounds, during the last year. The stomach-tube is arrested 15 inches from the teeth. By passing the tube stiffened with a wire stylet, the contents and size of the stomach are found to be normal. Decided resistance to the passage of a 15 mm. sound is encountered at the cardia but is overcome by light, steady pressure. Radiographs failed to show anything abnormal. By the methods to be considered under diagnosis, dilatation of the esophagus was excluded. A bulbous sound was passed at frequent intervals during

November and December. This gave a little relief, and he gained 10 pounds.

January 8th, 9th, and 16th the cardia was dilated with a balloon-dilator. From the latter date to the present time he has had no dysphagic symptoms. His weight increased from 129 to 161 lbs.

February 17, 1906, he was operated upon for a right inguinal hernia.

CASE 8

T. W. S., examined January 17, 1906; female, aged 21 years; married, and has one child two and one-half years old. Family history, negative. At eleven years of age she had dyspeptic symptoms, i. e., distress and belching after meals. She never considered herself strong, but is not of a decided nervous type. Four months previous to the birth of the child she began to regurgitate food while at the table. The dysphagic spells rapidly increased in frequency, and within a few weeks the complaint differed but little from that made at the present time. The interval between the taking of food and its regurgitation gradually lengthened. As a rule, she eats as freely as though no difficulty existed and the esophageal contents are ejected at intervals throughout the twenty-four hours, without much reference to the time of ingestion. Food entering the nasal passages at night is very annoying. The amount regurgitated at one time varies from a mouthful to half a pint.

The details of the history and findings on examination go to show that the more fluid portions of the food slowly pass the cardiac orifice, the surplus being thrown out. While under observation, pieces of beef were regurgitated 72 hours after eating, it being known that softer food taken in the interval had entered the stomach. This fact is mentioned because it has been made a point as favoring the diagnosis of diverticula as against dilatation. Examination, other than that directed to the trouble under consideration, is negative, except for a small left ovarian cyst. General nutrition is good. At all attempts to pass a soft rubber stomach-tube it is arrested 15 inches from the teeth. The withdrawn mucus and food contents of the esophagus are alkaline in reaction. Stomach-contents, obtained by passing a soft tube with a wire stylet, show HCl present. Size and position of stomach are normal. In passing a large-sized bulbous sound only normal resistance is encountered at the cardia. On several occasions the sound was passed after 36 hours of fasting, and always caused the ejection of considerable food and mucus. The radiograph shows a fusiform dilatation of the esophagus two and one-half inches in diameter at its widest portion.

February 28th, March 4th, and March 10th,

the cardia was dilated with a rubber balloon. There has been no indication of dysphagia since the last dilatation. A parovarian cyst with twisted pedicle was removed at St. Mary's Hospital on March 17, 1906.

CASE 9

H. K., examined May 7, 1906; female, aged 30 years; has five brothers and one sister, all in good health. No history of previous illness. First experienced a sensation as of being seized by the throat and choked when at Lenten service in March, 1903; duration, a few moments; repeated at intervals of a few days or weeks during the next 18 months, at first independent of taking food. Then began the regurgitation of food at progressively longer intervals of time after eating. The food comes up without effort and is not sour. Food frequently runs out of the nose at night. Her weight decreased from 180 to 114 lbs. within the last 18 months. Patient greatly emaciated. Stomach-tube can be passed without encountering resistance at the cardia. Food withdrawn from the esophagus is alkaline in reaction; that from the stomach shows normal acidity. The esophagus is an inch and one-half in diameter from the cardia to the third dorsal vertebra.

The cardia was dilated May 12th and 14th. Since the latter date the patient stated she has been absolutely well and has gained 14 lbs.

CASE 10

H. P., referred by Dr. B. M. Randall, of Graceville, Minn. Examined June 1st. Male, aged 40 years; has had no serious illness since childhood; five years ago dysphagia began while sick with the whooping-cough. During the first two years the spells were of short duration, were unaccompanied by the regurgitation of food, and occurred only at intervals of several weeks. For the last five years the greater part of each meal has been regurgitated, and for a number of weeks he has been able to get only a small amount of liquid food into the stomach. He is 60 lbs. below his normal weight. Loss of weight and strength has been very rapid during the last few weeks.

The cardia was dilated June 2, and at the meal following the dilatation nothing abnormal could be detected. Since June 2 he has gained 25 lbs.

CASE 11

Examined June 10, 1906, K. C., male, aged 30 years, farmer. Previous history, negative. Dysphagia began 18 years ago. Patient is unable to recall many details of the early history, but states that there was a short period during which the food was regurgitated. He then learned to force the food into the stomach by rapidly drinking a glass of water after filling

the esophagus with solid food. During the 18 years all food has been taken in this way. The last year eating has been slow, and he has with difficulty taken sufficient food to satisfy his appetite. Within the last few months he has been losing weight. As shown in a radiograph, the dilated esophagus is shaped much like an Ehrlingmeyer's flask, the base resting on the diaphragm. Repeated attempts at passing a stomach-tube and the ordinary bulbous sound into the stomach failed. Finally at 15 mm. olive-shaped bulb was drilled from the tip to a point a little to one side of its base with a one-sixteenth inch drill. This was threaded on a silk thread and introduced by the method made use of by Dunham to pass bougies in cases of cicatricial stenosis. With the thread drawn taut, the sound readily entered the cardia and passed with very little pressure, but failed to give any relief to the patient. The following day a balloon-dilator was introduced in a similar way, and the cardia stretched. Since the treatment the patient has been unable to detect any obstruction to the passage of food.

"In 1874 Von Ziemssen and Zenker collected the first series of cases of so-called idiopathic dilatation of the esophagus. They were nearly all based on post-mortem records, little being known of the history of the patients." The condition was first attributed to cardiospasm by Mikulicz in 1882. In the *Deutsche medicinische Wochenschrift*, for January, 1904, he quotes the following causes from Lichtheim, and admits them as factors: first, primary cardiospasm (Mikulicz and Meltzer); second, primary atony of the musculature of the esophagus (Roentstein); third, simultaneous presence of cardiospasm and paralysis of the circular fibres of the esophagus brought about by paralysis of the vagus (Krause); fourth, congenital disposition (Fleiner); fifth, primary esophagitis (Martin).

Whether the cardiospasm precedes or follows the dilatation of the esophagus is of considerable interest in the prognosis of the cases treated by forcible dilatation. If atony be the primary condition, it would seem that there may be little hope for the permanency of the good results following the procedure. The sequence of the symptoms in the cases here reported—i. e., the early spasmodic pain, later regurgitation, and, still later, retention of food for progressively longer periods—is that which we would expect in stenosis of the cardia followed by increasing dilatation of the esophagus. That cardiospasm precedes the dilatation is still further borne out by Case 5, in which dilatation had not occurred, and the history corresponds in the essential details with the history of the other cases previous to the stage of retaining food in the esophagus.

This is the only case in which spasm of the cardia could be unmistakably demonstrated by sounding.

It does not seem at all improbable that atony and dilatation may occur as a primary condition in some cases. Once established, the dilated esophagus is perhaps equally responsible with the cardiospasm in continuing the train of symptoms.

Under normal conditions the solid food is pushed forward by the peristaltic contraction of the muscles of the esophagus, but after dilatation of the esophagus takes place the food is forced into the stomach only by its own weight. Case 11 overcame the resistance at the cardia by putting the food into the dilated portion of the esophagus under pressure. This the patient accomplished by filling the sac, and then swallowing water rapidly. There is a decided periodicity throughout the history in nearly all the cases. Up to the time when dilatation takes place, the intervals between the dysphagic spells are not marked by any complaint whatever, but with dilatation the symptoms become almost continuous, and during the periods of exacerbation the occlusion at the cardiac opening may be almost complete. The dilated esophagus is never completely emptied and may contain several ounces when the patient states that food is going through all right. In Case 8 a 20 mm. sound would almost drop through the cardia of its own weight at a time when the esophagus held half a pint of soft food after 36 hours of fasting. From these observations it seems probable that the periods of exacerbation occurring after dilatation has taken place, correspond to the periods of dysphagia previous to the dilatation, and that the detention of food in the esophagus during periods of comparatively little trouble is due to lack of force to expel its contents through the cardia contracted little, if any, more than in its normal condition.

There is nothing in the history of these cases to suggest the presence of esophagitis previous to the spasm of the cardia. Esophagitis secondary to the dilatation, is a result to be expected from the retention of food.

The apparent rarity of this disease, as indicated by the few cases reported in the literature of this country, must be due to the failure to recognize a symptom complex which is almost pathognomonic. There are many reasons for this; perhaps the most important is the paucity of literature, as most of our text-books fail to mention the condition. The complaint as made by the patient, is much like that made by some cases of nervous vomiting, and if stenosis is expected, this is apt to be dissipated by the failure to meet resistance or gain relief from the passage of large sounds.

As a rule, the first attack of cardiospasm occurs suddenly and unexpectedly. A spasmodic, choking sensation is felt at some point in the esophagus, usually at the cardia, and radiates to the neck or back. As in Case 9, this may occur at intervals over a long period, independent of taking food or liquid. Early in the history of regurgitation the food is returned to the mouth immediately after swallowed, but as the esophagus becomes dilated the food is retained for longer periods. The esophagus is rarely found empty, even after hours of fasting.

That the food does not seem to enter the stomach, that there is a sense of weight or discomfort in the chest, and that the ejected matter is not sour, are statements common to all the patients. Since, under normal conditions, the force of gravity is sufficient to carry liquids from the mouth to the stomach, while solid foods are carried along by the peristaltic contraction of the esophagus, liquids are more often regurgitated than solids before dilatation takes place. After the esophagus becomes dilated, soft food more readily passes the cardia. As in Case 11, the patient may learn to use the upper portion of the esophagus to compress the contents of the sac and force the food into the stomach. Cases 6, 8, 9, and 10 complained much of the regurgitation of food into the nasal passage during sleep.

The failure to pass a stomach-tube, when a large sound readily enters the stomach, should at once suggest the possibility of cardiospasm. In the diagnosis, cardiospasm is to be differentiated from organic strictures, carcinoma, etc.; from obstruction due to external pressure; from diverticula of the esophagus; and from certain conditions causing the regurgitation of food from the stomach. The unyielding character of the obstruction met with in passing a large sound in organic stricture, at once shuts out cardiospasm. As illustrated by Cases 8 and 10, one must be assured that the sound has entered the cardiac opening, and not impinged upon the pouched wall of the esophagus.

It may be possible to exclude malignancy, early in the history of dysphagia, in which case it is advisable to avoid undue instrumentation and await the further progress of the disease.

The diagnosis of tumors, aneurisms, etc., causing dysphagia by pressure upon the esophagus, depends largely upon direct evidence of the existence of these diseases. If any doubt exists as to whether the food is being returned from the stomach or the esophagus, a stomach-tube with a wire stylet is introduced, and the esophageal contents withdrawn. The tube is now passed into the stomach, the stomach contents obtained, and a differential diagnosis made on

an analysis of the two portions of food.

Passage of a soft stomach-tube was impossible in all of the cases here reported, with the two exceptions noted, but no difficulty was experienced when the tube was stiffened with a steel wire, except in Cases 8 and 10. In Case 8, the tube was passed by giving it the bend of Mercier's sound, and in Case 10 by the method described in the history.

Having excluded organic stricture, cause for external pressure, and determined that the regurgitated food does not enter the stomach, the diagnosis lies between diverticula and dilatation of the esophagus. In spasm of the cardia without dilatation, the history of the case and absence of obstruction to the passage of a large sound, are usually sufficient to establish a diagnosis. It is easily confirmed by the relief obtained from dilating the cardia. The history and findings in diverticula and in dilatation of the esophagus with spasm of the cardia may be almost identical, the differential diagnosis resting upon direct proof of the existence of either one or the other. As only those cases of diverticula originating below the middle third of the esophagus are apt to cause confusion, diverticula located higher up are not here considered.

Radiographs were made in Cases 6, 7, 8, 9, 10, and 11 immediately after giving two ounces of bismuth mixed with starchy food. The dilated esophagus is clearly shown in all but Case 7, and the positions of the shadows and their relations to the surrounding parts are such that it would be almost impossible to mistake them for diverticula.

If any doubt exists, the method to which I resorted in Case 7 to demonstrate the absence of dilatation, may be used. A rubber balloon is introduced, distended, and drawn against the cardia to prove that it has entered the stomach. It is now drawn into the stomach, again distended with the bismuth mixture under sufficient pressure to overcome the elasticity of the rubber, and then radiographed. The relative position of the anode, plate, and balloon being known, the exact diameter of the esophagus can be ascertained. The existence of a sac being assured, the determination that the esophagus is of normal size is sufficient evidence that the sac is a diverticulum.

The difficulty in keeping some nervous patients quiet for a sufficient time to obtain a radiograph led me to devise a sound which, I think, gives more positive evidence than any of the methods heretofore used. A rubber-dam balloon is attached to the lower end of a stomach-tube in such a manner that the tube just passes through the balloon. The end of the tube is closed, and holes are punched in the tube so that its calibre communicates with the interior of the

balloon. An oval silk-bag one inch in diameter is drawn over the balloon and fastened to the tube. This is introduced into the stomach with a steel stylet and distended with water under sufficient pressure to make the stylet, tube, and balloon form a solid sound. The sound is drawn up to locate the cardia, collapsed, drawn into the esophagus, and distended. If, under distention, the sound can be moved freely up and down it is withdrawn and the silk bag replaced by a larger one. In this way, by using a series of sounds of increasing size, the diameter of the esophagus, at any point, and the approximate idea of the shape of an existing dilatation, may be obtained.

Until recently the treatment of cardiospasm has consisted of such ineffectual measures as attention to the patient's general condition; fluid, non-irritating diet; effervescent powders; bromides; the frequent passage of large sounds; and, as a last resort, gastrostomy. Mikulicz, in the *Deutsche medicienische Wochenschrift*, of January and February, 1904, reported that he operated upon four cases with apparently perfect success. A gastrostomy was done, and under control of two fingers a long, curved forceps, the blades covered with rubber, was worked into the cardia. The forceps was gradually opened until the maximum distance between the blades reached 6 cm., and the cardia then restretched to its utmost. In the *Annals of Surgery*, of February, 1906, Erdmann reports one case entirely cured by this method after an interval of 20 months. Case 8, here reported, was completely relieved for four months.

The seriousness of the condition warrants this major operation only provided equally good results cannot be obtained by simpler means of forcible dilatation. Russell (*British Medical Journal*, June 4, 1898) reports six cases treated by dilating the cardia with a silk-covered rubber balloon. Four cases were completely cured, one was much improved, and one was not improved. Sippy, at the recent meeting of the American Medical Association, reported a number of cases successfully treated in this way. The dilator, as used on the cases here reported, is made by cementing a rubber-dam balloon to one end of a piece of non-elastic rubber tubing in such a manner that the tube just passes through the balloon. The end of the tube is closed with a rubber plug, and a number of holes so punched that its lumen communicates with the interior of the balloon. A sausage-shaped silk bag is drawn over the balloon to preserve its shape under distention. Several sizes, five inches in length and varying from three-fourths to one and one-fourth inches in diameter, are provided. If the dilator is slightly constricted in its middle third, the tendency for it to slip into the stomach or esophagus

phagus is lessened. A flattened steel wire is used as an introducer. Provision for connecting a tube leading to a water tap or pump is made. A section of this tube is doubled. One passage is narrowed by inserting a capillary glass tube, and the other section is provided with a stop-cock. An altitude gauge is also connected by means of a T joint. Having previously determined the position of the cardia, the dilator is introduced sufficiently far for the cardia to engage the balloon at its middle third, and the water turned on at the tap until the gage indicates the pressure of one or two feet. The stop-cock is now closed, and the pressure slowly raised to the required point by forcing the water through the capillary tube. The force to be used is determined by the tolerance of the patient and the results obtained from former attempts. The pressure used ranged from 5 to 25 ft., great variation being shown in the ease with which the cardia dilates. In Case 6, the cardia contracted sufficiently to cause obstruction within a few days after each dilatation, until a pressure of approximately 15 lbs. was reached. The reason for the failure to obtain satisfactory results by those who have used the mouth to expand the dilator is at once apparent. Danger of tearing the esophagus is to be avoided by stretching slowly and having the dilating force under such control that it may be instantly released if severe pain indicates any giving way of the tissues of the cardia. Sudden expansion of the dilator, should a tear start, is guarded against by constructing an instrument of rigid tubing, filling the dilator with a non-compressible medium, and having the water supply almost shut off by the capillary tube. If a compressible medium like air is used, dilatation of the cardia from a small calibre to the full size of the dilator can take place without materially lowering the pressure, and therefore, should the tissues begin to give way, a large rent in the esophagus might suddenly occur. To further provide against accidents, dilators of increasing size should be employed, but this is no safeguard unless sufficient pressure is used to give assurance that each successive size is extended to its full diameter. Two or three dilatations have been sufficient, as judged by the results obtained, to completely paralyze the circular musculature of the cardia. Recurrence of the dysphagia will depend largely upon the ability of the dilated esophagus to regain its normal size and tone. Relapses are to be expected in some of the cases. The size of the dilated esophagus will be determined from time to time in the cases which can be kept under observation, and the ultimate results reported.

DISCUSSION

DR. C. H. MAYO (Rochester): These cases are being reported, especially from Europe, but very few have been reported in this country. A few weeks ago a description was given in the *British Medical Journal* by a surgeon of a case of cardiospasm in which he said he could not pass a stomach-tube. He did a gastrostomy with the result that the man is now able to eat following the temporary rest. He thought there must have been some tumor at the bottom of the esophagus, and through this manipulation the passage was opened, but it is as perfect a history of cardiospasm as I have ever heard.

DR. GEO. DOUGLAS HEAD (Minneapolis): I think we are all greatly indebted to Dr. Plummer for this very instructive paper. These conditions must certainly be very unusual in the experience of most of us. Dilatation of the esophagus with the rubber bag, and the results which the doctor reports, are very encouraging. Personally, I have seen only two cases of this condition of cardiospasm. Both of the cases are still alive. One of them, however, came very near death's door. He was practically a walking skeleton, but at the present time he is gaining in weight, and has gained some thirty-five or forty pounds since the attack. How many cases have proved fatal I am not able to say, but the condition is certainly a remarkable one, and Dr. Plummer's results in treatment are most remarkable indeed.

DR. H. S. PLUMMER (Essayist): There is only one point to make, and that is the probable frequency of the condition. It is a condition that is constantly passed over and unrecognized. In going over the literature of this country, as far as I know it is only treated of in a paper by Dr. B. W. Sippy, of Chicago, read before the American Medical Association at the late meeting, in which he gives a description of it written up by an English author.

All those who have seen cases have seen a good many. At St. Mary's hospital, where I was operating, some were recognized at the time they were examined. Since becoming interested within the last six months I have seen seven cases. These facts show that we are overlooking the cases. One week I went over a man, and he had almost typical symptoms of cardiospasm. The cases do not give a history as written here unless you elicit it. They may have vomiting immediately after eating, but they forget the period. They may also have eructations after eating, but, as with vomiting, they think it may have come a considerable time after eating. One case was a case of trouble with the esophagus.

All these cases go to illustrate that the condition must be much more common than we had previously supposed. It has attracted a great deal of attention in Germany within the last two years.

The tenderness in appendicitis may not be (probably usually is not) just at McBurney's point. The base of the appendix is, however, usually at, or near, that point. The site of greatest tenderness is often over the tip of the appendix. A line drawn between that site and McBurney's point will many times represent the general direction in which the appendix is lying.—*American Journal of Surgery*.

NOTES ON OCULAR SYPHILIS, WITH REPORTS OF TWO UNUSUAL CASES*

By E. S. STROUT, M. D.,

MINNEAPOLIS

The eyes or their appendages may be the seat of a syphilitic process at any stage of the acquired disease, and are not infrequently involved in an inflammatory process as the result of hereditary lues. No portion of the eye is exempt from attack, and while the uveal tract, from its great vascularity, is most frequently involved, the less vascular structures do not escape.

Syphilis of the eye may follow the usual type, or the disease may, as in other regions of the body, assume an erratic or irregular form. The quotation made use of by Keyes will aptly apply here: "Age cannot wither her, nor custom stale her infinite variety." According to Alexander¹ 2.16 per cent of all diseases of the eye are the result of syphilis, and Mangus² states that 2.2 per cent of blindness is due to this cause. The frequency of eye involvement in cases of constitutional syphilis is a hard matter to determine, but it is quite certain that the disease, unhampered by treatment, will, in a large percentage of cases, attack the eyes directly during the secondary or tertiary stages, or, through cerebral lesions of the tertiary stage, will produce secondary changes in the eyes, such as choked disc or paralysis of the motor nerves. Fuchs³ says that 50 per cent of all cases of iritis are due to syphilis, and other writers give the proportion as 40 to 60 per cent. Paralysis of the eye muscles is of syphilitic origin in from 50 to 80 per cent of all cases.

Prompt and energetic treatment at the beginning of the secondary stage will undoubtedly prevent many of the eye lesions that are common to that stage and practically all tertiary manifestations, for most of the cases of ocular syphilis give a history of having received no treatment or of having discontinued the treatment as soon as the eruption disappeared.

The particular structures to which attention will be called in this paper are the sclera, the iris, and the optic nerve.

Syphilitic lesions beginning primarily in the sclera may occur in three forms, as an episcleritis, a simple scleritis, and gumma of the sclera, the latter being most rare. Most of the text-books pass over the subject of gumma of the sclera with the remark that is a rare condition, appearing as a tertiary lesion. Norris & Oliver⁴ dispose

of this subject with the statement that "Gumma of the sclera independent of the ciliary body has sometimes been seen. Andrews reports one case." Weeks' says that syphilitic involvement of the sclera is rarely observed. When it does occur it may manifest itself in the form of gumma, usually affecting the anterior segment of the sclera, and, if untreated, breaks down at the apex, and destruction of the eye may ensue.

The following case will illustrate the characteristic symptoms of gumma in this situation:

The patient, a male, aged 29, consulted me on March 9th of this year, on account of a tumor in the sclera of the left eye. This case was shown to the Hennepin County Medical Society at its second meeting in March.

The patient stated that a swelling had appeared quite suddenly four or five weeks before, without pain or signs of inflammation except slight redness immediately surrounding the tumor. It had gradually increased in size until three days before his visit when the eye became quite red and sensitive to light. On examination the vision was found to be 6-6 in each eye; pupillary reaction, normal. A tumor about 8 mm. in length by 5 in breadth could be seen situated in the sclera on the temporal side of the eyeball and extending well up to the limbus. There was slight infiltration of the cornea adjoining the anterior border of the tumor. It was not moveable, but the conjunctiva overlying it was moveable except at the apex. It was not painful and only slightly tender on pressure. There was marked conjunctival hyperemia and moderate ciliary injection. Ophthalmoscopic examination showed the mediæ clear and the fundus normal. In answer to a direct question the patient stated that he had had a chancre nearly two years before, and an inspection of the pharynx revealed cicatrices in that locality.

On the appearance of secondary symptoms he had consulted a physician who had administered succinimid of mercury, hypodermically, for one month, at the end of which time the patient, thinking himself cured, had discontinued the treatment against the advice of his doctor. From then until the eye symptoms developed he received no treatment.

He was given a vigorous course of mercurial treatment, together with rapidly increasing doses

*Read before the Minnesota State Medical Association, June 19-21, 1906.

of potassium iodid. Instillations of atropin in 1 per cent solution were used in the left eye for two weeks. Under this treatment the tumor rapidly diminished in size. In three weeks it was reduced one-half, and at the present time only on close inspection can a slight elevation be made out. When the eye is not in use there are no signs of irritation, but the eye still blushes on examination in a strong light, and a slight redness appears at the site of the lesion after use of the eyes in artificial light.

There was nothing characteristic about the appearance of the tumor to aid in a diagnosis.

The usual forms of scleritis of rheumatic origin may result in the formation of nodules, but the process is accompanied by marked inflammatory symptoms, severe pain, and usually lowered visual acuity. In this case the swelling had existed for several weeks without disturbance of any kind until of sufficient size to encroach on the ciliary body and cornea, when photophobia and lacrymation developed.

Sarcoma is the only malignant new growth developing primarily in the sclera and is extremely rare. Fibromata and osteomata have been observed and are also rare. The sudden appearance of a tumor, without pain or tenderness or other signs of inflammation, and the rarity of primary new growths in the sclera led to a diagnosis of gumma.

The usual forms of luetic iritis are extremely difficult to diagnose; in fact, there is nothing characteristic in a plastic iritis of luetic origin to differentiate it from an iritis arising from other causes. It can be determined only by the history or, in the absence of this, by the presence of other evidences of syphilis, by a process of exclusion and finally by the results of antisyphilitic treatment. These results are usually prompt and positive in the secondary stage of the acquired disease, but not always as satisfactory in hereditary syphilis or in the late tertiary stage, when changes in the vessel walls render alterative treatment less effectual. Therefore it does not necessarily follow that cases which do not respond to antisyphilitic treatment are not due to this cause.

The true cause of iritis may be lost sight of in cases of trauma, unless it is borne in mind that a slight injury or the exposure of the eyes to strong light, as well as excessive use of the eyes, may induce an attack in a syphilitic subject. There are, however, two forms of the disease that offer certain diagnostic signs. These are iritis papulosa, occurring in the secondary stage, and iritis gummosa, which is a tertiary lesion.

In iritis papulosa small hemispherical papules or condylomata appear in the iris. These are

reddish-yellow and the size of a pin-head or larger. The other conditions, which may simulate this, are non-pigmented sarcoma and tubercle.

Fuchs⁶ gives the following points of differential diagnosis:

"Sarcomata contain most vessels, syphilitic growths fewer, and tubercular masses have scarcely any vessels passing through them. The tubercular nodule is grey and semi-transparent or, as another author puts it, has a gelatinous appearance. Condylomata are always situated at the pupillary or ciliary margins of the iris, while other tumors may arise from any point on its surface.

"Iritis appears earlier with syphilitic and tubercular tumors than with sarcomata. Tubercle, as a rule, is found in people under twenty, while the other tumors usually occur after that age. Tubercular iritis is always a secondary disease, except in rare instances, when the infection may gain entrance through a penetrating wound of the eyeball. Finally, in doubtful cases only energetic mercurial treatment may clear up the diagnosis."

Aubineau⁷ says that if in iritis circumscribed hemorrhagic plaques are observed a positive diagnosis of syphilis may be made. The possibility of the occurrence of a syphilitic and tubercular inflammation in the same eye is mentioned by some authors.

Gumma of the iris is a rare condition, developing late in the tertiary stage. It may attain great size and rapidly destroy the eye.

In hereditary lues, iritis is not often met with except as an accompaniment of interstitial keratitis, but it does occasionally occur independent of corneal inflammation. Jonathan Hutchinson⁸ records only twenty-three cases occurring in syphilitic children under sixteen months of age. The following case, while not presenting unusual features, illustrates some of the difficulties of diagnosis:

W. K., aged 12, was brought to me on October 11, 1905, on account of an inflammation of the left eye. The father stated that the eye had been red for several weeks and in the last few days had become quite sensitive to light and moderately painful. No history of injury or previous attack could be obtained.

Examination:—Vision R. 6-5; L. 6-18. Lids, normal. The left eye showed marked ciliary injection; the cornea clear, the pupil contracted, iris muddy and congested, with an adhesion to the lens at the inferior nasal quadrant. Under atropin the pupil dilated except at the point of adhesion. The tongue of iris tissue forming the synechia finally gave way, and the lens was found to be clear except for a small patch of iris

pigment at the point of adhesion. The aqueous was slightly turbid, which gave the fundus a hazy appearance, but no organic changes were found except a small round deposit of pigment below the disc. The family history was gone over again with negative results. The nose and mouth were examined, but nothing indicative of specific trouble was found. The teeth presented the lamellar appearance often seen in rachitic children.

A history of rheumatism affecting other members of the family was obtained. A diagnosis of iritis was made, the etiology uncertain, but probably rheumatic. Atropin and dark glasses were prescribed, with salicylates internally, and a grain of calomel every third day in divided doses. Three days later his condition was unchanged except that the pain had increased. This was almost immediately relieved by the instillation of a drop of a 3 per cent solution of dionin. On the 18th his vision was the same, but ciliary injection less pronounced. He was referred to the family physician, Dr. F. A. Knights, for examination, who reported the presence of indican in the urine, and on his advice an intestinal antiseptic was added to the treatment.

October 23d, vision L. E. 6-18.

With the loupe a few deposits could be seen on the posterior surface of the cornea indicating that the ciliary body was also involved.

He was now put on a vigorous course of mercurial treatment, the atropin continued and dionin instilled at each visit until November 10th. During the following week the deposits on Descemet's membrane increased, but from that time there was steady improvement.

November 10th his vision was 6-12. November 20th with + 0.75 D. S. + 0.25 cyl. ax. 90 he could read 4 letters in the 6-6 line. Potassium iodid was added to the treatment.

December 7th, vision L. E. with correction 6-5 (partly). Deposits on Descemet's membrane disappearing. Eye free from redness. Atropin stopped.

January 3, 1906, vision L. E. 6-5 (4-1). Cornea quite clear except lower part.

June 2d, vision L. E. 6-5 (4-1). Cornea clear. Deposit of pigment below the disc, unchanged.

Optic neuritis of luetic origin is usually secondary to cerebral syphilis. Uhthoff⁷ found choked disc due to cerebral syphilis in 14 per cent of his cases; in 8 per cent as a result of gummatous basilar meningitis, and in 6 per cent as a consequence of true syphilitic cerebral lesions. It may develop from a gumma within the nerve or from pressure due to a syphilitic periostitis involving the orbital wall or the optic foramen.

An intra-ocular neuritis, due to the direct

invasion of the nerve by the syphilitic virus in the early secondary stage, is seldom seen.

Horstman¹⁰ mentions a form of syphilitic optic neuritis, not of cerebral origin, developing in from one to four years after infection, and states that the younger the patient and the earlier the ocular disturbance appears after the initial infection, the more favorable the prognosis. From this statement it would seem that his cases had developed during the late secondary and in the tertiary stages.

Acute retrobulbar neuritis occurring in the secondary stage is more common. In this form of inflammation, according to Elschnig¹¹, who reports a case which came to autopsy, there is a primary interstitial neuritis.

The papillomacular fibres, which form a wedge-shaped bundle situated in the temporal side of the nerve, are chiefly involved, with consequent rapid and marked reduction in central vision. Uhthoff¹² states that the most pronounced manifestations of the disease are found in the optic foramen and in the anterior portion of the nerve behind the eye.

The following case presents an unusual form of optic nerve involvement, beginning with an intra-ocular neuritis involving both eyes within ninety days from the initial sore and followed a few weeks later by an acute retrobulbar neuritis affecting one eye, but with no increase in the disturbance within the eye.

The patient, a female, aged 35, consulted me on February 10, 1906, on account of transient dimness of vision. She complained that at times there seemed to be a mist before her eyes, and that this would come and go many times during the day, also that there was a strained feeling about the eyes, but no pain or soreness. Movements of the eyeballs and pressure on the globe caused no discomfort. The vision was R. E. 6-6 (partly), with + 0.25 D. S. + 0.25 cyl. ax 105, was 6-6. L. E. 6-9, with + 0.75 cyl. ax. 65 was 6-6, but the letters were seen as through a fog.

No external evidences of trouble were present in either eye except that the pupils reacted slowly to light. On ophthalmoscopic examination the medæ were found to be clear, but signs of a mild optic neuritis were seen in each disc, more marked in the left. The nerve head was moderately swollen, the disc margin obscured, the veins distended and tortuous, and both arteries and veins were partially hidden at the margin of the papilla. Except for the condition of the vessels, just described, the retina presented a normal appearance, outside of the immediate vicinity of the disc, where it was rather pale, suggesting a slight edema.

The fields for white were slightly contracted at the upper and lower borders, but the contraction of the field for colors was more pronounced. There was no central scotoma for colors. Inquiry into her general condition brought out the statement that the mouth had been sore for several weeks, and inspection revealed characteristic mucous patches.

She had consulted a physician on the same day in regard to the condition of her mouth, who informed me that he had prescribed mercurial inunctions; also that as near as he could gather from the history the primary lesion had appeared late in October, or about three months prior to the development of the eye symptoms. In addition to the inunctions she was given the iodids and pilocarpin internally. Vapor baths were ordered, and the use of dark glasses with complete rest for the eyes. She returned to her home in the country, but discontinued the iodids in a few days on account of gastric disturbance and, owing to a misunderstanding of her physician's orders, used only a few grains of the ointment each day. Two weeks later she reported by telephone that on the previous night she had a severe chill, the lids of the left eye had become greatly swollen, and that she was nearly blind in that eye.

When seen on the following morning the swelling of the lids had nearly subsided. The vision was R. E. 6-6 and L. E. 6-36, but the letters were read with great difficulty. There was a central scotoma for colors. There was pain in the left temple and behind the eye, increased by pressure. Movements of the eye caused pain. In fact she presented the classical symptoms of retrobulbar neuritis.

The nerve head was less swollen than at the previous examination, but the disc margin was still blurred, the veins distended, the arteries diminished in size, vitreous absolutely clear, and no visible changes in the macular region. The patient was now thoroughly alarmed and willing to carry out any treatment prescribed. Inunctions of three grams of mercurial ointment daily were used. Potassium iodid was pushed to the point of toleration, and the diaphoretic treatment continued. Leeches were applied over the left mastoid. Ten days later she could read with a little difficulty, part of the letters in the 6-6 line, still complaining of a slight fog. On March 10th her vision was 6-6 and absolutely clear. The swelling in the papilla had subsided, so that the vessels were distinctly seen, the disc margin could be made out except on the nasal side, the veins still distended.

May 24th, vision, both eyes, 6-6.

The right disc appeared nearly normal except for a slight haziness at the upper nasal border.

The left disc was not as distinct as the right, but the veins were less swollen than at former examination. The fields were still slightly contracted vertically.

A post-neuritic atrophy has been anticipated, especially in the left eye. As yet there are no evidences of this, but it is too early to say how much loss of vision may ultimately result.

It is true that no arbitrary line can be drawn between intra-ocular and retro-ocular neuritis.

Those cases of acute retrobulbar inflammation in which the nerve is involved immediately behind the eye undoubtedly produce swelling of the papilla that can be seen with the ophthalmoscope, but prior to the ophthalmoscopic changes we have the cardinal symptoms of a retrobulbar neuritis, which are pain and rapid and marked reduction in central vision, and color scotomata.

In many cases of retro-ocular neuritis, however, no changes are seen in the papilla or only slight pallor of the disc is present. It seems probable that we then have a neuritis which involves the nerve posterior to the entrance of the central vessels.

In a recent article on retro-ocular neuritis, Marcus Gunn¹³ says that one of the distinguishing features of the disease is the rapidity of the visual failure, which is in contrast to the length of time that a papillitis may exist without the nerve function being affected, and with the usual very gradual failure when this does occur in the latter. He also states that in this form of optic neuritis there is a strong tendency to recovery, which in favorable cases usually takes place in about six weeks, and that in those cases in which changes in the optic disc are found these changes do not appear for some days after the visual failure.

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DISCUSSION

DR. E. J. BROWN (Minneapolis): I do not wish to discuss Dr. Strout's excellent paper, but I do wish to call attention to the importance of the routine examination of the fundus of the eye. Some years ago a woman by the name of Doyle consulted me regarding impaired sight. I found both optic discs swollen, but could elicit no history to account for it. One of her neighbors later informed me that she was of

vicious habits. A few days after her only visit at my office she was taken to one of the state hospitals on account of acute mania, and soon after died. An early diagnosis in such a case and specific treatment might probably prove effective, and I wish to emphasize the importance of the ophthalmoscopic examination as an aid in diagnosis.

DR. E. S. STROUT (Essayist): I am very glad that

Dr. Brown spoke about the fields in these cases. If I had had the time I should have shown you diagrams of the fields in my case of optic neuritis, which show that the fields were contracted both for form and colors, although the patient had good central vision. At the present time, although the patient has 6-5 vision in each eye, the fields are still contracted vertically.

THE CALORIMETRIC PRINCIPLE IN INFANT-FEEDING*

By J. P. SEDGWICK, B. S., M. D.

MINNEAPOLIS

It is not my intention to speak of another "method" of infant-feeding; nor is there a desire to add to the difficulties or complications of a subject already overburdened with detail. This paper is presented with the hope that there will be seen in this principle, elaborated by Heubner, of Berlin, a means of simplifying and scientifically regulating the quantitative exhibition of the infant's nourishment.

It has been said that infant-feeding has passed through three stages: the stage of chemical modifications; the stage of bacteriology; and, more lately, that of great interest in milk ferments as studied by Eserich and Moro. The good of each stage has been assimilated, but unfortunately with a complication of "methods."

The calorimetric principle is applicable to any of these methods, and, moreover, by its assistance the simpler methods of feeding are rendered practicable.

Medicine was not slow in seeing the far-reaching significance of the demonstration, by Rubner, of Germany, and our own Atwater, that the law of the conservation of energy is applicable to the physiological processes of the body. Müller and Von Noorden, especially in the latter's work on "Obesity, Nephritis and Diabetes," have emphasized its importance. It was, however, left to Heubner, in conjunction with Rubner, to show the importance of heat calculation in infant-feeding.

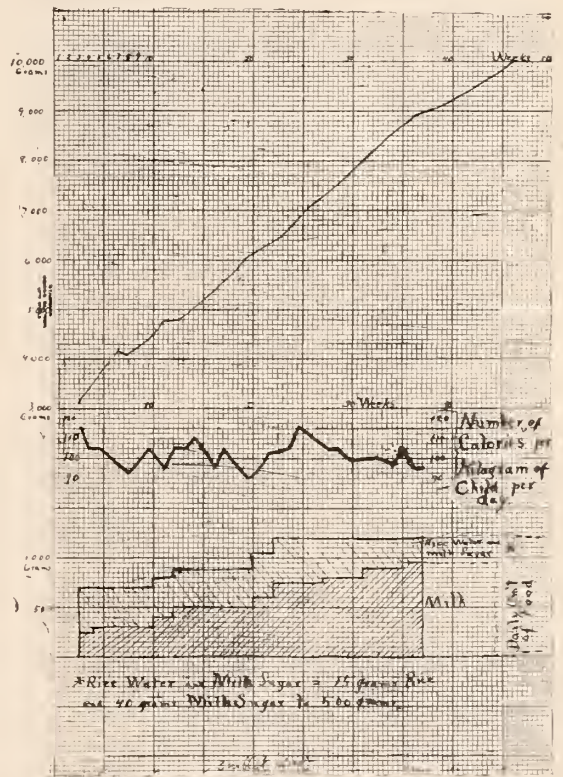
In the different methods of feeding, various proportions of the three ingredients, fats, proteids, and carbohydrates, have been used. How shall we be sure that the child will get enough and not too much? There is but one common factor for these three food elements, and that is the calorie. The fats, proteids and carbohydrates may be raised or lowered to suit indications, but the total heat value of the food must remain sufficient to meet the child's heat and energy output by radiation, movements, diges-

tion, etc., or the child's own substance will be called upon to make up the deficit.

In all of this work the great calorie has been used, i. e., the amount of heat needed to raise one kilogram of water from 0 to 10, centigrade. The generally accepted physiological heat values for the three food elements are—

- 1 gram proteid represents 4.1 calories.
- 1 gram carbohydrate represents 4.1 calories.
- 1 gram fat represents 9.3 calories.

By means of pains-taking physical and physi-



ological experiments Heubner was able to enunciate the practical rule, that an infant, during the first six months of life, should receive one hun-

*Read before the Hennepin County Medical Society, June 4, 1906.

dred calories for every kilogram of its weight. This energy-quotient was arrived at by studying the amount of mother's milk consumed by a healthy child, with the heat or energy value of breast milk, and reducing the same to terms of calories per kilogram of infant. The following table, taken from Heubner, illustrates the above:

TABLE I

3rd	3300	16.0	530	328
4th	3800	16.0	600	372
5th	4000	16.7	660	409
6th	4300	17.0	730	453
7th	4500	17.5	790	490
8th	4700	17.0	800	496
9th	4900	16.5	809	502
11th	5100	15.5	790	490
13th	5400	15.0	810	496

By comparing columns two and five of Table I it will be seen that the number of calories per kilogram of child is remarkably near to 100.

Table II shows the amount of food, weight, and calories per kilogram of child reckoned from an observation of Finkelstein.

TABLE II

Rubner and Heubner were also able to confirm these clinical observations by carefully conducted metabolism experiments.

The great clinical value of the reduction of the intake of nourishment to the terms of calories is that we now have a common factor for the heat, energy, or food value of the foods of the different methods, as can be plainly seen in Table III:

TABLE III

	Calories.
100 ccm. of breast milk represent.....	70
100 ccm. of cow's milk represent.....	70
100 ccm. of buttermilk represent.....	71.4
(Prepared with the addition of 15 gm. flour and 60 gm. of sugar.)	

100 ccm. Liebig-Keller's malt soup represent 80
 100 ccm. 5 per cent carbohydrate solution represent20
 100 ccm. 2-3 milk and 40 gm. sugar represent63

Using the physiological values, the calorie content, or food value, of any mixture can be calculated. Take, for instance, the following formula by Rotch for a two-months' old baby:

Fats	Sugar	Proteid
4.0 per cent	7.0 per cent	1.5 per cent

One liter of such a mixture would contain—
 Fat 40 gm. x 9.3 (factor) equals 372 calories.
 Sugar 70 gm. x 4.1 (factor) equals 287 calories.
 Proteid 15 gm. x 4.1 (factor) equals 61 calories.
 Sum or number of calories represented by one liter of mixture, 720 calories.

The average infant at two months weighs 4.007 kg., and therefore requires, at the rate of 100 calories per kilogram, 490 calories or 490-720 liter or 680 cubic centimeters a day.

The calorie conception often enables us also to check the value of other therapeutic means. In one case recently brought to my attention the child of about 4 kilograms weight was being given ten drops of olive oil three times daily as a supplementary food. Thirty drops of oil are approximately 2 ccm. Now, multiplying by our factor of 9.3 for fat we find that the child was receiving 18.6 calories in oil. The futility of the 18.6 calories can be seen when we think that a child of 4 kilograms requires 400 calories a day. The sugar or maltose of the malt preparations and the fat of cod-liver oil can also be similarly controlled.

During the second half year the energy quotient is lower, i. e., from 85 to 90 calories per kilogram of child.

Those interested in a further discussion of the subject can profitably consult the writings of Heubner, Finkelstein, or Salge.

THE BUSINESS PROBLEM OF THE GENERAL PRACTITIONER*

BY CHRISTIAN JOHNSON, M. D.

WILLMAR, MINN.

From a high idealistic view-point the medical profession is regarded as a charitable organization which should be wholly forgetful of self and ever devoted to the service of others irrespective of hope or expectation of reward. This view is, of course, too ethereal for this progressive age, and it is now generally recognized that the

profession of medicine is in all essentials a legitimate business, to be conducted as any other, according to recognized business principles.

The physician's stock-in-trade is his knowledge, experience, and skill in his profession, acquired at great expense of time, labor, and money. This the physician offers for sale, and sells; and this the sick is continually seeking after, and buys, and pays for. This business

*Read before the Minnesota State Medical Association, June 19-21, 1906.

transaction between physician and patient is subject to all the honorable rules of honorable business. It is simply an exchange of a commodity for money, and no more.

The business difficulties of the ordinary physician have heretofore been utterly ignored at our society gatherings as too sordid a subject for consideration. In the meantime our competitors, the irregulars and the nostrum-venders have worked with their coats off, and have flooded this country from one end to the other with quackery and nostrums. Lately we are beginning to wake up and to look into the situation. This paper is written more for the purpose of calling attention to certain facts bearing on the business situation as it confronts the general practitioner now, than to propose dogmatic statements as to remedies.

Considering, then, general practice as a business vocation—a money-making or living-making vocation—how does it compare with other vocations for return on investment and energy expended?

This is a pretty difficult question to answer. Individuals differ very much, and men in all other vocations have variable success. So we should not expect all physicians to be prosperous. Some have mistaken their calling, and others do not utilize with diligence their talents. But taking a wide and comprehensive view of the subject, it is instinctively felt that many, very many, of the best practitioners of medicine do not get an adequate return for their expenditure of time and energy.

Consider for a moment the investment in a medical education. It exceeds that required for the lawyer, the pedagogue, the minister, the engineer, the pharmacist, and the dentist. Then consider the hours on duty by the general practitioner, which is virtually night and day, within reach of call to work, if he expects to hold his end with his eager competitors. Certainly, such preparation, such responsibility, and such close attention to duty ought to secure to the physician a financial return way above the average. But actual conditions clearly indicate that he does not receive that, and hence we must conclude that the general practitioner of to-day does not secure from society what he is fairly entitled to compared with other vocations of modern life.

The question then arises, Is there an over supply of physicians relative to the medical business of the community, or are our competitors, the nostrum-venders and quacks, getting the business away from us? Or do both of these conditions exist to account for the proverbially poorly paid doctor?

Much has been said about the over-supply of doctors in this country and their large percentage per capita of population compared with European

countries. But statistics on this point really prove nothing, as the conditions in this country are so different from those in European countries. There the masses of the population are too poor to employ a physician except in extreme cases, and all contagious diseases are handled by a sanitary official paid by the state. The working population are all enrolled in a Krankenkasse of some kind, and tended to in cases of sickness or accidents by a Krankenkasse physician at wholesale rates. Private medical attendance is a luxury, possible only to the wealthy, while in this country few are so poor but that they can choose their family physician and pay for his services.

If we look at this subject from another standpoint, namely, the amount of money spent annually by the public for medication and the percentage of this that the regular physicians get, it will appear that it is not so much overcrowding as it is our failure to secure our share of the offerings of the public to the goddess hygeia per annum.

There are about 125,000 legally authorized physicians in practice in this country at the present time. About 25,000 of these are specialists,—the big fee men of the profession,—and the 100,000 are in general practice. Just how much these 100,000 physicians in general practice collect annually for their services, is pretty difficult to ascertain, but it does not exceed much over \$1,000.00 per capita or \$100,000,000. The 25,000 specialists no doubt collect another \$100,000,000; perhaps much more.

In order to get some basis of comparison I have studied the situation in the county in which I live, an ordinary prosperous, intelligent farming community containing a population of 20,000, with a city of 5,000, and several smaller towns. There are in our county twelve legally qualified physicians. They collect annually—I estimate—between \$20,000 and \$25,000. This estimate is rather above than below the truth. One-half of us are old men, above or close to sixty years of age, and while all these old men have worked hard and lived economically all their lives, none of them are rich—I mean rich enough to retire from practice, as is the case with quite a number of business men who started out with nothing in the same community when our old physicians began to practice. I know it is customary to believe that physicians make much more per annum than above indicated, but this belief is due to the boasting habits of physicians. It is unethical for a physician to tell the public that he is an No. 1 physician, but it is not unethical to lie about his income. Hence, an up-to-date medical man has to boast of his large income to make the community in which he lives believe

that he is somebody. But his stake at the finish of the game generally shows that his large income was largely in his imagination.

To get at the amount of money spent for fakes, quacks, and nostrums in our county per annum the newspapers of the county have been studied for advertising earnings. A copy of our oldest weekly newspaper, the one that has the largest circulation, was picked up at random, and its quack-nostrum advertisements sorted, classified, and estimated. There were in that issue thirty-four distinct quack-nostrum advertisements, covering with display and reading four solid columns, but scattered all over the ten columns of the twelve-column paper, the first and the last page being reserved for late local matter. I give this as a sample. All the seven newspapers of the county were gone over and studied with the help of a local newspaper man. It is certain that the newspapers of our county get at least \$5,000 a year for quack-nostrum advertising, and perhaps much more.

There are also seven drug-stores in the county, and it is estimated that they derive at least as much profit from the quack-nostrum traffic as the newspapers, and very probably a great deal more; but a conservative estimate allows us to say that at least \$10,000 per annum is the net profit to the newspapers and drug-stores on the quack-nostrum traffic of our county. The gross sales in our county of so-called patent medicines alone is certainly over \$20,000 per annum, practically equal to the amount twelve regular physicians collect. Now, add to that the annual outlay to traveling specialists, to advertising quacks, to chiropractics, to osteopaths, and to medical fakirs of all kinds, to counter prescribing, etc., and it is safe to say that regular physicians get about 25 per cent of the money annually paid out by the community for health and long life.

To be sure a large share of the quack-nostrum traffic would not exist at all except for the advertising and drumming tactics of the quack-nostrum promoter. Perhaps one-half of the business is created in that way. But assuming that one-half of the quack-nostrum traffic is fictitious, there still remains enough legitimate medical business in any community which now goes to the quack-nostrum promoter, but which ought to go to the ethical physician, and which, if it did go there, would double the average annual income of the general practitioner. Looking at the business problem from this standpoint the medical profession is not overcrowded, but it lacks business ability to get the business that legitimately belongs to it.

This subject of quacking and nostrum faking has received of late quite considerable attention, both from a moral and a business-sociological view. I am now looking at it from a business

standpoint as it affects the general practitioner of medicine. The causes of the great prevalence of the quack-nostrum industry of to-day are various and obvious. The first to be mentioned is that there is money in it. This working on the fears and the hopes of sick and suffering humanity by the skilled quack-nostrum promoter is a veritable gold mine. Greed and gold are the twin talisman that silences all conscientious scruples of the otherwise respectable nostrum vender.

Next we may mention our democratic form of government, and individual liberty. When a man becomes of age and acquires the power to manage his own affairs, he also acquires the possibilities of mismanagement. So the American citizen, while he possesses the right of self-government and an individual liberty unknown in European countries, is also liable to be imposed upon. Time and experience will remedy this trouble.

But after all due allowance has been made for greed and folly in human nature as causative factors of the present enormous quack-nostrum traffic, we must not forget that the medical profession itself is greatly to blame. For example, the strenuous advocacy by leading specialists in medicine for a number of years of therapeutic nihilism has tended to prejudice the public against the general practitioner and to open the path for quackery and the nostrum traffic. Osteopaths, Christian Scientists, quacks, and nostrum-venders are now flooding the country with circulars, quoting leading medical men to the effect that no medication is of any use in pneumonia, typhoid fever, tuberculosis, and well-nigh all common diseases. It is not an uncommon thing for intelligent people now to come to our office and ask if we can do anything for this or that disease. The general practitioner is the one that treats pneumonia and typhoid fever and all the other ordinary diseases that need only a nurse according to the therapeutic nihilist, hence he is the one that is "oslerized." The surgeon and the specialist do not see it yet, but they will undoubtedly see a new light after the general practitioner has gone out of general practice and into the specialties.

Therapeutic nihilism as a cult or a fad had its origin in Europe, and prevails there as a speculative tenet among physicians. And even there under ironclad antiquackery laws and court-martial procedures it has driven general practice into the hands of a horde of irregulars. The writer of this was in Europe last summer, and while visiting in a village of a very intelligent community was surprised to find that irregulars, and not physicians, were called from a near-by city in cases of ordinary diseases. On inquiry it

was learned that the regular physicians had made people believe that they could do nothing for ordinary ailments, that an up-to-date physician should only treat a disease at a hospital or perform major surgery or obstetrics. In the nearby city, of some 20,000 inhabitants, there were, as near as I could learn, eight regular physicians, all either state officials or almost wholly engaged in hospital work, while as many irregulars were doing the ordinary doctoring among the people at large. If we keep on telling the public that we can do nothing for ordinary diseases, the day is not far distant when the general practitioner will be displaced by the loud shouting of the osteopath and the Christian Scientist.

But the prescribing by physicians of proprietary nostrums is perhaps the greatest blunder of all, viewed from a business standpoint. We all know how we were worked by the oily nostrum drummer. He would come around and sing his song of praises of this stuff, and persuade us to try his wonderful article—just try it, you know. It was, of course, to be sent in unbroken packages to the druggist, and, if you distrusted the honesty of the latter, directly to the patient. On that bottle or package was a long description of the virtues and powers of the articles and direction where to get more when it was gone.

I presume most of us have been guilty of being taken in by this graft sometimes in our lives, yet it is on our part both a crime and a folly. For instance what business has a physician to prescribe an article of whose properties he and the profession know nothing? It is a disgrace to the physician and a wrong to his patient. To be sure new therapeutic agents of value are very much desired, but such can and should come in the broad daylight of science, and not as a commercial graft. And then, again, what a folly from a business standpoint to boost the articles of the proprietary trust whose object is to flood the country with nostrums and to displace with

their traffic all scientific medicine and pharmacy!

Now, as to the remedies for the evils above complained of; they are not difficult to discover, but rather so of execution. From legislation we need not expect any relief of importance. It is true that we have a medical-practice act, and have had it since 1883, but it is also true that we have a sectarian medical school at the State University, and have a law authorizing osteopaths to practice medicine. We probably shall have before we get through legislating on the subject legalized Christian Scientists, chiropractics, and other new healing sects that may come up, and departments at the State University for teaching these new schools of healing.* As to suppressing nostrum vending and quackery by law it is out of the question while the newspapers and druggists of the state are deriving from these sources a large part of their annual income.

The real remedy for our difficulties lies within our own reach. We must save ourselves or we are lost. The organization of the profession of the country so as to bring the members thereof into harmonious and intelligent co-operation is our only salvation. Heretofore the A. M. A. and the other medical societies of the country have been, along with their good work, a good deal of mutual-admiration societies. Hereafter the actual material business interest of the profession must engage our deliberations at the county, state, and national societies; and unless the societies, county, state, and national, do that, they will die unborn and unsung, and they ought to. But let our societies stand high up with their united influence back of any and every member whenever and wherever he is assailed in his rights or in his pocket-book, instead of, as heretofore, everyone for himself and the devil take the hindmost; and then, and not until then, shall we see a thoroughly organized, powerful, and prosperous medical profession, general practitioner as well as the man at the top of the ladder in specialism.

GASTRO-ENTERITIS*

BY HELEN HUGHES, M. D.

MANKATO, MINN.

The term *gastro-enteritis*, like many other terms in medicine, covers more than is intended. Enteritis may mean an inflammation of the whole intestinal tract, while such a condition shows rather the effect of the disease prolonged to a fatal issue.

The parts most seriously affected are those

surrounding the two acid stations of the tract, the stomach and the colon.

This disease has been called the *milk sickness* or *milk poisoning* by those who prefer naming it for the cause rather than for the lesions it produces. And there is no doubt that milk plays a very important role, both in the production and the aggravation of the symptoms.

Dr. Vaughan of Ann Arbor was among the

*Read before the Minnesota State Medical Association, June 19-21, 1906.

first to notice the similarity between the symptoms of gastro-enteritis and those of poisoning with infected milk. Guinea-pigs dying of an artificially produced gastro-enteritis caused by the injection of milk containing large quantities of lactic-acid germs, showed all the symptoms observed in children dying from what was then called "summer diarrhea" or cholera infantum. These were diarrhea, vomiting, thirst, and, as the disease progressed, extreme restlessness, tossing of the head, and plaintive moaning, dull sunken eyes, and the drawn expression peculiar to the disease in children, and rapid course, merging, as a rule, into a typical cerebral meningitis.

Diagnosis.—The diagnosis is usually easy, and as the symptoms are urgent the doctor is called earlier than in most diseases of children. The thirst, the greediness to drink water; which is immediately rejected, points to inflammation of the stomach, while the simple vomiting of food may occur in an attack of indigestion or the beginning of any of the acute infectious diseases.

Treatment.—The treatment is included in the word *rest*, absolute rest, physical, physiological, and mental. Elimination, which plays so important a part in all infections, is, in this case, usually accomplished by nature before the arrival of the doctor; and the bowels are probably cleared by a diarrhea. If there is any doubt about this a high colonic flushing should be performed. It is not necessary to pass a long tube for this purpose, if the child's body is elevated sufficiently. The stomach, by this time, is not only cleared of food, but is washed by the repeated vomiting of the water it craves. There remains now to allay thirst, and as the stomach rejects water, it would be a difficult problem if it were not for the fact that the rectum is usually in good condition and retains water with a trace of salt well. A child can be given from an ounce to two ounces, according to its age, every two hours at first, and later at longer intervals. It is wonderful how thirst and nervousness will disappear under this treatment, and the shrunken tissues return to their normal appearance.

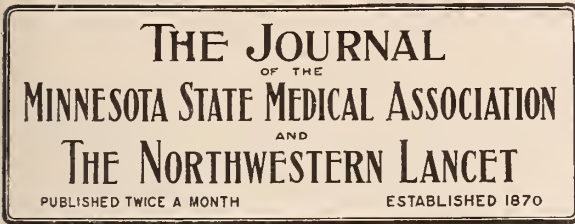
All food should be withdrawn for at least twelve hours. Even the most delicate child can stand such a period of starvation. Food given before the inflammation of the stomach subsides, is not nutrition, but irritation. In very serious

cases, food is not digested for even twenty-four hours. A little of some of the liquid prepared foods may be given by rectum if there are indications for it, but, as a rule, it is not necessary, and from its use the rectum may become irritable and refuse water, thus cutting off an important avenue of internal treatment.

For the stimulating and flushing out of the kidneys we can rely on the rectal injections. If the fever is high and persistent the cool bath or cold pack is indicated, but a high range of temperature is not often observed, except in neglected or mismanaged cases. If the disease has been allowed to progress for any length of time, say, twenty-four hours, it is usually beyond medical skill.

The nervous symptoms are more pronounced; indeed, except for the previous history, the case might be taken for a meningitis. The diarrhea, vomiting, and thirst give place to extreme restlessness and pronounced delirium, marked even in quite young children, and a rising fever. Even then something may be done by the cool bath beginning at 98 degrees and reducing it to 78 degrees. Morphine, used hypodermatically, will give perhaps as much satisfaction in soothing the nerves as anything, though often the cool bath renders its use unnecessary.

The heart seldom requires support, except in complicated cases, and atropin can be given with the morphine. There is perhaps no disease, not even typhoid fever, where the aid of a nurse is so much required as in this. And if it is impossible to procure such aid, the life of the child depends on the doctor superintending and directing some intelligent member of the household until the symptoms are under control. The mother, especially the young, nursing mother, usually makes a bad nurse in such cases. It is too much to expect of her that she obey the Spartan rules as regards rest, food, and drink, that are so essential, or look with hope on a line of treatment that does not include drugs in a heroic measure. After the inflammation is allayed, there is a danger period in returning to foods. A little egg-albumin water may be given tentatively, increasing the amount every two hours if vomiting does not return. After a few hours barley or rice water with a little cream, may be added to the diet. If it is a nursing baby, its regular food may be resumed twenty-four hours after vomiting has disappeared; if taking a mixed diet, milk should be withheld for a longer period.



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THE CIRCULATION

Sir James Barr, in a paper read before the British Medical Association on the circulation, views it from the periphery and says that "diseases of the heart most frequently arise from causes acting on the periphery, and the man who studies the circulation with the aid of a stethoscope only, is a positive danger to society." The author discusses the various phases of the circulation and especially capillary velocity and activity, the relationship between the pressure in the arterioles and the capillaries, and the permeability of the vessel walls which account for the phenomena of transudation and absorption. The capillaries of the kidney are protected from excessive pressure by contraction of the arterioles, and from backward venous pressure by a second set of veins. The liver acts as a reservoir for the right side of the heart. The lungs depend chiefly on the force of the right heart for their circulation, while they act as a reservoir for the left side of the heart.

One point to be remembered is that the arterioles of the brain are not controlled, apparently, by vasomotor nerves, that they are terminal vessels, and the lateral pressure in them is relatively

small, hence exudation is small and the cerebrospinal fluid is poor in albumin.

The coronary vessels also appear to be devoid of vasomotor nerves, and the larger branches under the strain of aortic pressure are very liable to degeneration; but the terminal branches are not much affected.

The heart is only a small part of the circulatory system, and is not the bugbear it was formerly considered.

The presence of gross lesions in the heart in elderly people is ample proof of the soundness of this view.

The condition of the blood vessels is of the utmost importance, and a study of the various organs and their relation to the peripheral circulation will demonstrate the value of Sir James Barr's views.

In closing his paper he emphasizes his position strongly when he says: "The circulation of the blood is one of the most perfect pieces of mechanism in the universe, and no amateur should be trusted to keep it in repair, yet people pour tons of baneful drugs down their throats every year on the recommendation of advertising quacks, who care nothing for the lives and health of the community, and care for nothing but their money."

DISTRICT AND COUNTY SOCIETY MEETINGS

The medical men are getting together more and more, and the society "habit" is apparently gaining a firm foothold. The weather is no drawback, as meetings are held during the hot months at semiresort places where hotel accommodations are ample.

The western organizations are more active than their eastern brethren. The societies bordering the western line of Minnesota and the eastern line of the Dakotas meet frequently and profitably together. At Ortonville, on Big Stone lake, three societies met at that famous resort, and discussed all kinds of medical problems. Men from Aberdeen and down the south line of South Dakota, western and central Minnesota, joined in one society meeting. The lake offered many opportunities for pleasure, and the new hospital building, erected by Drs. Karn and Bolsta, was carefully inspected.

To study hospital construction, however, one must go to Yankton, S. D., for expert information.

The Yankton District Society, a large and general organization which takes in men from Minnesota and South Dakota, met at the Hospital

for the Insane. Under the guidance of Dr. L. C. Mead the building and equipment of a modern hospital was an important part of the program. Two buildings of special concrete construction illustrated modern and economical methods. Dr. Mead has given so much attention to concrete construction that he is considered an authority on the subject. The buildings are practically fire-proof, the walls are solid concrete, and, in place of the standard iron beams, twisted iron cables imbedded in cement reduce the cost of construction very materially—how much, the editor would not undertake to say, except that it not only lessens the cost, but it enables the designer to enlarge floor and ceiling space with an absolutely safe constructive element.

At this meeting a paper by E. C. Erickson, Esq., was read (it was published in our issue of Sept. 1st) on the relation of the public to the state hospitals for the insane.

Mr. Erickson has been a member of the board of trustees for many years, and is familiar with the insane and their needs. From a layman's point of view his paper is educative in that it shows the rights of the insane, the attitude of the public toward them, and the advance in management and treatment.

Papers of this kind, by lawyers, business men, and other laymen are beneficial, and show that it is well for doctors to mingle and consult with the other professions. It serves also to draw the attention of the people to public institutions and to induce them to take more than a political interest in their management.

It will also educate the legislators to the necessity of generous expenditure of money for the care of the dependents of the state. It is economical in the end to encourage the upbuilding of state institutions and the selection of men at living salaries to manage and provide for the insane.

Mr. Erickson makes a very good point when he declares the service of a legal paper on the insane is a farce, yet it is done, and what is accomplished? Nothing but worry and trouble for all concerned. The service of such papers should be made upon state or county officers, is Mr. Erickson's remedy.

The Yankton meeting was an unqualified success.

If the secretaries of these various meetings would send in an official program and report, THE JOURNAL-LANCET will be glad to publish them.

THE SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The first meeting of the Southern Minnesota Medical Association was held at Winona in 1892 with the late Dr. N. S. Tefft, of Plainview, in the chair. In 1896 Dr. Tefft became president of the Association. The first president elected was Dr. Franklin Staples, who was so long identified with the State Board of Health and who died a few years ago. The meeting on August 2, 1906, was the fifteenth annual meeting, and was again held at Winona.

The association is a very active one, with a large membership, and it always presents an interesting program. A feature of the last program was the papers presented by men from the country towns in which unusual and interesting cases were reported from a therapeutic standpoint, medical and surgical.

The average paper offered to a medical society is more or less interesting (usually less), but when it is re-inforced by a rational, scientific line of treatment with successful results, the paper becomes valuable, no matter what the criticism in the way of discussion may be.

The president, Dr. R. C. Dugan, reported a successful operation in extra-uterine pregnancy. Of course, others have had equal success, yet each case which terminates successfully should be recorded.

Dr. Edward Ochsner, of Chicago, outlined the treatment of senile gangrene, and Dr. W. J. Mayo led the discussion.

Dr. W. H. Witherstine, of Rochester, presented a paper in which paracentesis spinalis had been employed as a diagnostic and therapeutic agent in a number of cases of cerebrospinal meningitis.

Dr. E. A. Keyes, of Winona, reported the successful outcome of an operation for strangulated obturator hernia—a rare case.

Dr. J. W. Andrist, who practices in a small town, Ellendale, Minn., recorded five recoveries of puerperal eclampsia, which is an unusually successful experience.

Obstetrical experiences by Dr. Chas. T. Granger and Dr. Geo. T. Joyce, was different from the usual papers on this subject.

This is only a part of the program, but it shows a high degree of excellence and the proper scientific spirit in this progressive society.

The editor recalls one of the early meetings of this society and hence speaks with the spirit of confidence when he says the society is one of the strongest in Minnesota.

The fraternal element is equally strong, and every man who attends the meeting is given the

same cordial greeting that is accorded to speakers from abroad as from men who have attained prominence in the national field of medicine or surgery.

REPORTS OF SOCIETIES

DODGE COUNTY SOCIETY

The Dodge County Society met in Dodge Center on Sept. 19th. An interesting program was carried out, the chief features being a paper by Dr. Bigelow on "Shock and Its Treatment," and a paper by Dr. F. A. Davis, on "Giving and Receiving Commissions." Both papers brought forth free discussion. The society endorsed the action of the State Association in making a two-dollar minimum fee for fraternal insurance examination and five dollars for old line companies.

E. A. HARRISON, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A regular meeting of the Hennepin County Medical Society was held in the library rooms in the court house, Sept. 17th, with the president, Dr. F. C. Todd, in the chair, and 40 others present. The following resolution was adopted by the society:

"Whereas, Death has removed from our ranks a veteran practitioner, Dr. Columbus G. Slagle, who was an honest and upright man, esteemed by his brethren, and who was loyal to his profession, faithful to his patients, and kind and courteous to all,

Therefore Be It Resolved, That in the death of Dr. Slagle the Hennepin County Medical Society has lost a member who possessed virtues worthy of our estimation, and that we will cherish his memory with sincere respect.

Resolved, That a copy of these resolutions be furnished the family of the deceased and that a copy be spread upon our minutes.

Signed: J. H. STUART,
G. C. BARTON,
Committee.

Dr. E. J. Brown introduced a resolution in regard to the City Hospital which was referred to the Executive Committee.

Dr. Geo. D. Head presented a case of carcinoma of the stomach and one of cirrhosis of the liver.

Dr. S. P. Rees presented a case of chronic endocarditis.

Dr. R. F. Lynch and Dr. G. Rosen were nominated for membership.

Dr. Chas. A. Reed read a paper with the

title "Treatment of Club-foot in Infants." The discussion was opened by Dr. E. S. Geist and was also discussed by Dr. C. G. Weston and others, and closed by Dr. Reed.

Dr. E. S. Strout reported a case of aneurism of the internal carotid artery.

C. H. BRADLEY, M. D., Secretary.

NEWS ITEMS

Dr. D. R. Ivey, of La Crosse, Ind., has located in Max, N. D.

Dr. C. I. Titus, a recent Cornell graduate, has located in Minot, N. D.

Dr. Charles A. Titus, of Salida, Colorado, has moved to Minot, N. D.

Drs. Spafford and Evans, of Flandreau, S. D., have dissolved partnership.

Dr. Frances Connell, of Milwaukee, Wis., has located at Valley City, N. D.

Dr. O. A. Fliesburg, of Minneapolis, died on Sept. 12th, at the age of 56.

Drs. W. A. Hunt and F. P. Boyd, of Northfield, have dissolved partnership.

Dr. George D. Whiteside has moved from Wakonda, S. D., to Lester, Iowa.

Dr. M. J. Hammond, of Des Moines, Iowa, has located in South Shore, S. D.

Dr. H. J. O'Bryan has moved from South Shore, S. D., to Watertown, S. D.

Dr. A. C. Clark, of Aberdeen, S. D., is taking a post-graduate course in Chicago.

Drs. Limburg and Lenfest, of Bowbells, N. D., have opened a hospital at that place.

Dr. O. G. Frink, of South Shore, S. D., is doing post-graduate work in Chicago.

Dr. Valiquet, a recent graduate of Laval University, Montreal, has located in Waverly.

Dr. N. K. Whittemore, of Elk River, has been dangerously ill, but is now somewhat better.

Dr. H. Slipperrn, of Fosston, and Miss Elizabeth Aimes, of Litchfield, were married on Sept. 12th.

Dr. R. C. Faust, of Salem, S. D., was married last month to Miss Grace Bates, of Cherokee, Iowa.

Dr. Wm. L. Grant, of Grand Forks, N. D., has gone to California, where he will engage in practice.

Dr. Edward M. Gans, of Eveleth, and Miss Genevieve Wolf, of Stillwater, were married on Sept. 26th.

Dr. Edgar R. Brooke, one of the leading physicians of Montana, died last month at Bonner, in that state.

Dr. N. F. Bush, of Pelican Rapids, has moved to Fergus Falls and entered into partnership with Dr. Shering.

Dr. George R. Williamson, of Ardoch, N. D., will spend a year in Europe, mostly in London, in special study.

Dr. W. A. George, of Evarts, S. D., and Miss Julia B. Severson, of College Springs, Iowa, were married last month.

Dr. E. E. Torwick, of Volga, S. D., has returned from Chicago where he took a special course in the Chicago Polyclinic.

Miss Harriet L. Gerhard, of Chicago, has become superintendent of the hospital and training-school in the More Hospital of Eveleth.

Dr. W. F. McManus, of Ellendale, N. D., has located at Northwood, near Grand Forks, instead of leaving the state, as he had planned to do.

Dr. F. E. Wheelon, of Esmond, N. D., is doing post-graduate work in Chicago. Dr. Wheelon is a State University graduate, class of 1905.

Dr. Charles T. Miller and Dr. A. W. Miller are the republican and democratic contestants for the coronership in St. Paul. We wish Dr. Miller success.

Miss V. C. Flynn has assumed charge of the Glen Ullin (N. D.) Hospital, and was recently in St. Paul and Minneapolis purchasing supplies for the hospital.

The county commission of Brown County, S. D., proposed to issue bonds to the amount of \$15,000 to build a county hospital. It will be located at Aberdeen.

Dr. William K. Bartlett, of Minneapolis, was one of the six successful candidates to pass the recent army examination for admission to the medical corps of the army.

Dr. George H. Freeman, State University, '05, now connected with the St. Paul City Hospital, goes to the State Hospital at St. Peter as senior physician and as successor to Dr. Tuomy.

Dr. Henry H. Ruger, of Devils Lake, N. D., died last month at the age of 67. Dr. Ruger was a pioneer physician of North Dakota, having been located at Ft. Totten as an army physician prior to 1882, when he located at Devils Lake.

The Nicollet County Society held its semi-annual meeting last month at the State Hospital in St. Peter. Drs. G. W. McIntyre and F. P. Strathern read papers, which were fully discussed. Dr. Tomlinson gave the members a luncheon.

Dr. Mabel Ulrich has been elected professor of pediatrics in Hamline University, to fill the chair vacated by the resignation of Dr. F. A. Knights. Dr. Ulrich spent six months in special study in New York, the larger part of which was spent in the Babies' Hospital.

At the midmonthly (Oct. 15th) meeting of the Hennepin County Society, Drs. R. E. Farr and J. F. Corbett will present papers on cancer, with lantern slides. Dr. Farr speaks on "The Prevention and Treatment" and Dr. Corbett on "Early Diagnosis."

The Hennepin County Graduate Nurses' Association held its annual meeting in Minneapolis on Sept. 13th, with about thirty members present. The Association has a membership of 135, and last year's work was the most successful in its history. At nearly all times the demand for nurses has exceeded the supply. Dr. Marion A. Mead has been so efficient in her work as registrar that her salary has been increased, and a hearty vote of thanks was tendered to her. Miss Edith P. Rommel has been equally efficient as president, and a unanimous re-election showed the Association's appreciation of her work. The other officers elected were: First vice-president, Miss C. M. Rankeillour; second vice-president, Miss Lydia Keller; secretary, Miss Lena Christensen; treasurer, Miss Augusta Crisler.

PRACTICE FOR SALE

A good practice in a growing village in a farming country which is thickly settled, is offered for sale by a physician who wishes to locate in a city. No other physician in place; surrounding territory is large; an exceptional opportunity. My house is modern. Price upon application. Address M. L., Care of THE JOURNAL-LANCET.

PRACTICE FOR SALE

My practice in a village of about 500, in a good farming community in the central part of Minnesota, is offered for sale at a very reasonable price. Address E., Care of THE JOURNAL-LANCET.

X-RAY MACHINE FOR SALE

A Wagner mica-plate X-ray machine in good condition; complete outfit—cheap. For particulars, address R. E. F., No. 2 Syndicate Block, Minneapolis.

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EPIDEMIOLOGY AS APPLIED TO TYPHOID FEVER IN MINNESOTA*

BY H. W. HILL, M. D.

Minnesota State Board of Health Laboratories

MINNEAPOLIS

THE TYPHOID SITUATION IN MINNESOTA

The typhoid death-rate in Minnesota, taken from the last comparable statistics, was 1.9 per 10,000 of population. This does not compare unfavorably with the typhoid death-rate of Massachusetts (taken as one of the most typhoid-free states), which, for the same year, was 1.5 per 10,000. But the death-rates do not form a fair basis of comparison as to the prevalence of the disease in these two states, i. e., the number of cases per 10,000 population, because the fatality of typhoid fever, i. e., the percentage which the total typhoid deaths form of the total typhoid cases, is greater in Massachusetts, on the face of the official Massachusetts returns, than it is in Minnesota, so far as can be determined from the investigations of the Minnesota State Board of Health. Thus, were the typhoid fatality the same in both states, the slightly greater typhoid death-rate in Minnesota would mean only a correspondingly slightly greater prevalence. But the fatality of Minnesota appears to be only about one-fourth that of Massachusetts; hence, for the same number of deaths, Minnesota would have four times as many cases as would Massachusetts. Using this basis of calculation, in the absence of actual reports of cases in Minnesota, Minnesota probably has about 45 cases per 10,000 population, where Massachusetts has about

9 cases; in other words, Minnesota with a little over ten times the area of Massachusetts and only about two-thirds the population probably has about five times as much typhoid fever. There is then no question that Minnesota has a prevalence of typhoid fever greatly in excess of the "irreducible minimum" to which all progressive communities should look forward. Indeed, Minnesota had a higher case-rate (cases per 10,000 population) than Philadelphia for the year under consideration, and the typhoid of that city is a by-word amongst sanitarians.

THE RELATION OF THE STATE BOARD OF HEALTH TO TYPHOID FEVER

The relation of the State Board of Health to the typhoid-fever problem in Minnesota is that of a specialist called in consultation by an attending physician. It is, of course, the duty of the attending physician to supply the consultant with all the information in his power, to permit a full examination of the patient, and, finally, to advise with the consultant as to diagnosis and subsequent treatment. Minnesota, as a whole, let us say, is the patient. The physicians of Minnesota form collectively the attending physician, and the State Board of Health is the consultant. As the attending physician, the medical profession should furnish the history of the case and the symptoms observed; as consultant, the State Board must listen carefully to the information thus given and examine the patient, Minnesota, with the aid, and in the

*Presented in substance before the St. Louis County Medical Society, Duluth, February 8, 1906, at the suggestion of Dr. H. M. Bracken, secretary and executive officer of the Minnesota State Board of Health.

presence, of the medical profession. Having agreed upon a diagnosis, the treatment is to be outlined, and the attending physician is the one whose ethical duty it is to see that the treatment is carried out, so far as lies in his power. The State Board stands ready, armed with legal powers, to reinforce the physician and support him.

THE GENERAL EPIDEMIOLOGICAL DIAGNOSIS RELATING TO TYPHOID FEVER

In the case of typhoid fever, the epidemiological diagnosis is that many sections of Minnesota suffer from the abnormal condition that the excretory functions of the population as a whole are so performed that the excreta return to the population, instead of being harmlessly disposed of. This circulation of human discharges from the population back to the population is continuous, but, so long as the excreta remain normal, comparatively harmless. The typhoid outbreaks which occur are the chief symptoms of this main disability, brought to a head in this or that community, evincing itself as a local lesion in this or that member or organ, so to speak.

The prognosis is, that until a radical change can be secured this circulation of normal excreta will continue, and the local lesions will continue to develop whenever typhoid fever excreta are introduced into the circulation. The radical operation, or, rather, series of operations, required, are directed to stopping the circulation of normal feces, and consist in the introduction of good sewerage systems, whenever this is possible; the abolition, or absolute sanitary control, of the open privy vault wherever sewerage cannot be introduced; the strict sanitary control and regulation of mining and logging camps; the absolute exclusion of excreta-infected water from water supplies; the strict sanitary supervision of milk supplies; and, finally, the handling of all cases of typhoid fever, wherever found, as contagious or infectious. These operations, unfortunately, must be piecemeal and gradual, and, until they are complete, local outbreaks will continue to occur and must be treated individually.

EPIDEMIOLOGICAL PATHOLOGY

To show the basis of the diagnosis, that the circulation of human feces and urine from one person to another is the chief cause of typhoid fever in Minnesota, it is only necessary to cite the conditions which every one living here knows to exist over a considerable area of the state,—open privy vaults, abundant flies, water supply small in quantity or poor in quality, and, above all, the lack of attention to, or ignorance of, prophylactic personal cleanliness, so common amongst the mass of the population.

Esthetic cleanliness is not necessarily prophylactic cleanliness. The merely esthetically clean

housewife whose pride is her orderly house, spotless linen, shining pots and pans, etc., may, nevertheless, infect the milk with her own hands, or supply her family food or water contaminated with human excreta, while the untidy and even unwashed individual who has a keen eye and an intelligent view of the modes through which infection travels may entirely evade such a misfortune. On the other hand, conditions in many parts of the state are such that, at least in fly-time, the prophylactically clean person cannot possibly guard against all danger, even with a diet restricted to sterilized foods and drinks exclusively. The domestic fly marauds just as freely over the roast or the chop, or falls just as freely into the Pasteurized milk or the coffee, as in the case of unsterilized foods. It is true that in one's own home, fly-infection may be provided against to a great extent, but when one is moving about a good deal, dining in one place, supping in another, the ubiquitous fly cannot always be avoided. In many sections of the state, the stable, the closet, and the kitchen window are in close proximity. The stable supplies the manure, in which flies breed, the closet and kitchen alternating in affording them food and recreation.

To further illustrate this circulation of human excreta, the milking of cows with unwashed hands may be instanced. Everyone knows how, after going to the closet, one's hands are very likely to need washing—thorough washing—notwithstanding the greatest care. How many of those who milk cows in Minnesota clean their hands scrupulously and efficiently after each visit to their closets? It is an every-day matter in this state to have milking done by those who are convalescent from typhoid, by those who are at the same time nursing typhoid, and by those even who are suffering from the first stages of the disease. If, with unwashed hands, they daily introduce particles of their own discharge into milk, do they not also, when infected with typhoid themselves, introduce typhoid feces into the milk? How many guests at the hotels or restaurants thoroughly wash their hands after performing their normal functions in the hotel toilet-room? Many are content with the merest dip into the water, followed by a thorough drying on the hotel roller-towel. Think of the next man who uses that towel, even after a thorough washing off of his own excreta from his own hands. If this be true in the better hotels, how about the second and third and fourth rate places—the miners' boarding-houses and the logging camps? Is it hard to believe that the bacteria of the intestine of any one man in some of these boarding-houses soon becomes the common property of all? We often obtain

absolute proof of this if the bacterial flora he carries happens to include the typhoid bacillus.

EPIDEMIOLOGICAL THERAPEUTICS

Radical Treatment.—We do not have to go far afield to show that stopping the circulation of excreta in general will stop the circulation of typhoid excreta, and so secure the abolition of typhoid fever. There are very numerous examples in this country and abroad which it would be wearisome to quote.

Palliative Treatment.—Pending the radical operation of shutting off the whole circulation of all excreta, many things can be recommended which, if only the public follow them out faithfully, will stop the circulation at least of typhoid fever excreta. These things, however, the public will do under only the immediate fear of an existing epidemic, and then only the more intelligent and well-informed individuals in the community will do them, hence, they are only palliative and temporary—emergency methods.

A "shotgun prescription" for a typhoid epidemic, for use before the actual source of that particular epidemic has been discovered, is well illustrated by the following placard, recommended by the Minnesota State Board of Health for publication in communities during the early stages of an investigation.

TO THE CITIZENS OF _____

Typhoid fever is epidemic in _____. The State Board of Health is investigating this epidemic to find its exact source. Meantime govern yourselves as follows:

1. Typhoid fever is contracted solely by the mouth. If you do not put the poison of typhoid fever into your mouth you will never contract typhoid fever. Hence, watch the mouth.

2. Therefore, do not eat or drink anything (water, milk, oysters, fresh vegetables, or anything else) unless it has been first boiled, broiled, baked, roasted, fried or otherwise thoroughly heated through and through.

3. Do without all food or drink which has not first been thus heated. (Canned or bottled foods, other than milk and water, are not included in this.)

4. If living in the same house with a typhoid fever patient, do not handle your own food, or food intended for anyone else, even if it has been heated, except with hands that have been thoroughly washed with soap and very hot water. (Preferably also with antiseptics—ask your physician about the antiseptic to use). Wash before every meal in this way and before cooking, serving or eating anything, or putting the fingers in the mouth.

5. If there are flies, roaches, etc., about, see that all food and drink are protected from them

at all times. Flies and other insects often carry typhoid poison to foods and drinks.

6. The poison of typhoid fever does not show itself for two weeks after it enters the body; therefore, for the next two weeks, typhoid cases may develop from typhoid poison already taken in, but any case which develops on and after (a date two weeks later than the date of the placard) will be due solely to neglect of this notice and failure to carry out minutely the directions here given.

Other more individual methods can be applied also while the search for the actual source of the typhoid continues. Since, in all epidemics, contact cases form a more or less considerable proportion of all cases, nurses, attendants, etc., especially if these have to do with supplying food to others than their own patient, and for their own personal protection in any case, must be warned about the disinfection of stools and urine; the cleansing of their hands with antiseptics after every handling of the patient or the patient's discharges; the disinfection of the bed-linen, and tableware used by the patient, etc. Since, in many epidemics, it is the discharges of the patients already sick that are contaminating the general public, as well as the immediate attendants, by the disposal of these excreta into fly-infected closets, or into sewers, the outlet of which discharges near water-supply intakes, the disposal of the feces and urine, even after disinfection, should receive careful attention. Since human nature is extremely fallible, it is not sufficient to trust to giving directions for the disinfection of discharges alone, although when efficiently, conscientiously, intelligently and continuously done, this alone would be sufficient; but it must be assumed that it will not be done properly in all cases. Hence in summer screening of the windows should be advised, to lessen fly infection; milk vendors should be inspected; any person handling milk and at the same time suffering or convalescent from typhoid fever, or even living in the same house with a typhoid fever case, should be suspended from such work. So also with those working about hotel or restaurant kitchens or waiting on table; and those connected with public water supplies, especially the house-to-house vending of spring or mineral waters. It will often prove that all these precautions must continue even after the main source of the epidemic has been found, because this main source will often prove to be conditions of water supply or sewerage, which cannot be remedied without months of preliminary engineering surveys, drawing of plans, making of estimates, discussions and squabbles amongst the local authorities, advertising and letting of contracts, etc. Milk epidemics can very readily

be cut short by the suspension of the milk supply from the infected source. A pure "fly epidemic" can be met best by persistent daily disinfection of all privy vaults, pending the introduction of sewers or the advent of cold weather, but fly-screens also aid and should be advised. Occasionally even a water epidemic may be cut short, if the contamination is concentrated and from a single small source, which can be removed rapidly. In general, however, the "shot-gun prescription" already referred to must be continued for considerable periods in all well established epidemics.

THE PRACTICE OF EPIDEMIOLOGY

Epidemiology, then, is a definite branch of medicine. It includes diagnostic methods of its own, prognostic methods and therapeutic methods, not directed to the individual, however, but to the community. For this reason it is not a specialty which can be successfully practised in the absence of facilities for wide collection of exact data, minute information concerning extensive areas of country, and powers of investigation, legal, executive and technical, vested, as a rule, only in the hands of statutory authorities. Now, the part which the medical profession as a whole can and, to make epidemiology a success, must take in this science is the collection and reporting of the hygienic or epidemiological data concerning individual cases as they come under their care.

At present the State Board often receives notice from a health officer stating that typhoid fever is epidemic at a certain point, and asking for an investigation of a well or spring. A representative of the Board goes to the community in question. He knows, perhaps before leaving for his destination, only the fact that there is typhoid fever in the community. He is met at the station by the health officer, who informs him in a general way that there has been a great deal of typhoid for six or eight weeks and that it is getting so bad that something must be done. There is no magic in epidemiology, any more than in the practice of other branches of medicine. The epidemiologist cannot tell by passing down the main street of a town and taking dinner with the health officer just how to stop, in a day or two, an epidemic which has been running for two months, involving perhaps several dozens of persons. The very first thing he must know is all about each individual case, not the clinical history, but the hygienic history. To make an epidemiological diagnosis all the epidemiological data must be tabulated to show every case belonging to that particular outbreak by age distribution, sex distribution, occupation, residence, etc., to determine definitely what class of the whole population is affected, and what

section of the town or village, if the fever is not general, has supplied the largest number of cases. Then the distribution as to time of infection, as to milk supply, as to flies, connection with sewers, etc., must be examined minutely. Finally, if the data be full, exact, and reliable, it is usually possible to narrow down the probabilities to one or two. Then, and only then, do water analyses and official inspection become of value. Then, and only then, can specific determinations be made leading to the final revelation of the real seat of trouble. To say in a specific outbreak that "The general conditions favor the development of typhoid" is not a diagnosis. In a specific outbreak it is necessary to diagnose the specific trouble and treat that.

THE COLLECTION AND INTERPRETATION OF EPIDEMIOLOGICAL DATA

It may seem that the sorting out of cases from each other, and the tabulation of cases to show the source of infection in each is impossible, because of the prevalence of typhoid fever and the innumerable possible channels of infection in each case. This is to a certain extent true, and when the cases are very few in number, the difficulty is greater. Each additional case, however, if carefully examined, helps to throw light on the others in some way or other. To give a very simple hypothetical illustration, let us suppose that a single case, No. 1, has five possible sources of infection, which we will call A, B, C, D, E. So long as Case No. 1 remains the only case under observation, there is nothing to determine which of these possibilities is the real source. But Case No. 2 is unearthed, obviously from the same source as No. 1, whatever that may have been and having also five possible sources of infection,—A, B, C, F, G,—i. e., three possible sources are common to both patients, two are restricted to each case alone. We may then safely eliminate D, E, F and G, and then concentrate attention on A, B, and C. Now, if a third case develops, showing as possible sources of infection A, D, E, F, and G, the whole problem is solved, for while each case has various possible sources in common with one of the others, there is only one source common to all, i. e., A. It will be obvious, then, that an epidemic involving 100 cases is generally much easier to trace than an epidemic involving only 10 or 12 cases, always provided that full data are available.

This illustration will serve to show the necessity for adequate, exact, complete data relating to the source of each case of typhoid fever, without which the epidemiologist cannot successfully move hand or foot. There is no more value in announcing to the State Board the bare fact of an epidemic without furnishing such data, than there is in informing a physician over the tele-

phone that someone is ill and asking for diagnosis and treatment without furnishing any further information. In an epidemic already well established, perhaps six or eight weeks old, much of the data has been forgotten, contradictory answers to questions are given, and everything is left just as much at sea as ever. It is therefore now proposed to ask every physician and hospital to record certain data for every case of typhoid seen, as soon as the diagnosis is made. These data are to be sent to the State Board of Health, case by case. The advantages are obvious.

SUMMARY

1. Typhoid fever is extremely prevalent in Minnesota.

2. It exists because, and will continue so long as, the continuous circulation or "short-circuiting" of fresh human excreta exists here.

3. To stop this circulation means extensive, and expensive, construction or re-construction of sewage disposal systems, water supplies, etc., and the development of wide-spread interest in and understanding of "personal prophylactic cleanliness."

4. Pending these changes, the exclusion of typhoid excreta at least from this circulation must be secured.

5. The exclusion of typhoid excreta from this circulation can be accomplished—

(a) By the handling of all typhoid cases with proper hygienic precautions.

(b) By tracing and shutting down upon the specific sources of specific outbreaks.

6. Meanwhile the well informed person can secure reasonably complete protection from typhoid fever, even in the least well equipped communities, by constant watchfulness concerning food, flies, fingers, water, and milk. Briefly, typhoid fever is contracted only by the mouth, hence, *watch the mouth*.

7. Epidemiological diagnosis requires—

(a) The epidemiological data on each case.

(b) The tabulation and collation of these data.

(c) Inspection of the locality concerned.

(d) And, last, not first, analyses of suspected sources of infection.

CRIMINAL ABORTION*

BY J. W. ANDREWS, M. D.

MANKATO, MINN.

To prevent conception is not a crime in the eyes of the law. When conception occurs, whether legitimate or illegitimate, the law throws its wings of protection around the embryonic bud with the same adherence to justice as it protects the life of the man or woman of mature years. The difference is one of degree only. The act which seeks to prevent its fruition and birth is called *abortion*, and unless justified by law, as is true in some cases, it is called *criminal abortion*.

Abortion falls under three heads:

1. Accidental, when caused by a fall, or a blow, or a specific disease of the mother or ovum.

2. Lawful, when the physical condition of the mother is such that gestation would seriously threaten her life; for example, a badly deformed pelvis, the last stage of chronic albuminuria, or the last stage of tubercular consumption.

3. Criminal, when the object sought is the death of the vitalized ovum, thus preventing its growth to maturity.

The law prohibiting criminal abortion, in practically all states of the Union, reads about as follows:

"Any physician, or other person, who shall administer or advise to be administered to a pregnant woman with a vitalized embryo, or fetus, at any stage of uterogestation, any medicine, drug, or substance whatever, or who shall use or employ, or advise to be used or employed, any instrument or other means with intent to destroy such vitalized embryo, or fetus, unless the same shall have been necessary to preserve the life of the mother, or shall have been advised by two physicians to be necessary for such purpose, shall, in the case of the death of such vitalized embryo, or fetus, or mother, in consequence thereof, be imprisoned in the penitentiary not less than one nor more than ten years."

The English law reads as follows: "Every woman, being with child, who, with intent to procure her own miscarriage, shall unlawfully administer to herself any poison or other noxious thing, or shall unlawfully use any instrument or any other means whatsoever with like intent, and whosoever with intent to procure the miscarriage of a woman, whether she be or be not

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with child, shall unlawfully administer poison, or other noxious thing, or shall unlawfully use any instrument or other means whatsoever, shall be guilty of felony." "Whosoever shall unlawfully supply or procure any poison, or other noxious thing, or any instrument or thing whatsoever, knowing that the same is to be unlawfully used or employed with intent to procure the miscarriage of a woman, whether she be or be not with child, shall be guilty of a misdemeanor, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for the term of three years, or to be imprisoned for any term not exceeding two years."

The French, German, and Austrian laws are similar.

I cannot dismiss this part of my subject without making mention of the Minnesota law. In my judgment the Minnesota law prohibiting abortion is rather awkward in construction, but I give it, *verbatim*, as follows:

"Every person who, with intent thereby to procure the miscarriage of a woman, unless the same is necessary to preserve the life of the woman, or that of the child with which she is pregnant, shall—

"1. Prescribe, supply, or administer to a woman, whether pregnant or not, or advise or cause her to take any medicine, drug, or substance; or,

"2. Shall use, or cause to be used, any instrument or other means—

"Shall be guilty of abortion, and punishable by imprisonment in the state prison for not more than four years, or in the county jail for not more than one year.

"Every person who shall wilfully kill an unborn quick child by any injury committed upon the person of its mother, and every person who shall provide, supply, or administer to a woman, whether pregnant or not, or who shall prescribe for, or advise, or procure a woman to take any medicine, drug, or substance, or who shall use or employ, or cause to be used or employed, any instrument or other means, with the intent thereby to procure the miscarriage of a woman, * * * * or that of any quick child of which she is pregnant, and the death of the woman, or that of any quick child of which she is pregnant, is thereby produced, shall be guilty of manslaughter in the first degree.

"Manslaughter in the first degree shall be punishable by imprisonment in the state prison for not less than five years nor more than twenty years."

It will be observed that the Minnesota state

law makes a distinction between an abortion before and after the child is quick. The maximum penalty for procuring the abortion of a fetus before quickening is imprisonment for four years, while the procuring the abortion of a quick child is manslaughter in the first degree, with a minimum penalty of five years and a maximum one of twenty years' imprisonment. This is altogether wrong, and does not obtain in any other state to my knowledge, although I am not familiar with the statutory provision on this point in all the states; at any rate it is obviously wrong wherever it exists.

Life begins with conception, and it matters not whether the little human being has motion or not. *The taking the life of the unborn at any stage of its growth is a cowardly, brutal, murderous act, and should be classed manslaughter in the first degree.*

A physician is frequently applied to by women, both married and single, to produce an abortion. Many of these applicants are innocent of any intended crime, for the reason that they do not think it a crime as long as the "fetus has no life," as they express it. I am glad to throw the mantle of charity around these women, for I know that many of them would not stoop to this awful crime did they know the enormity of it.

Life is not manifest till about the fourth month, hence they reckon the beginning of life from this time, or from the time they feel motion. The pertinent question is, then, when does life begin? It was held in ancient times to begin with respiration, because the soul was supposed to enter the body with the breath. In middle ages the common law made quickening the test of life, and that begins at about four or four and one-half months. Modern law dates life from the moment conception takes place, and why not? If the acorn, buried on the hillside, be ruthlessly destroyed it can never make the mighty oak that survives the storms of centuries. If the rosebud be crushed when it begins to swell, it can never make the flower that administers delight and sweet perfume to the senses of sight and smell. It is, therefore, right and just and of wisdom akin to the Divine, that the law throws its powerful protection around the fruitful womb from the moment conception takes place. We cannot, therefore, agree with the woman who tells us there is no harm to help her out because there is yet no life. Upon us, fellow physicians, rests the sacred duty of educating those women, and the public, that life begins with conception, and that to destroy that spark of humanity is an awful crime. Some of

the most grateful patients I have ever had are those who have taken my advice in the matter, and have gone on to full term, and have given birth to a sweet and beautiful boy or girl dearer to the mother than her own life blood. I have known a few mothers under these circumstances to weep tears most bitter when looking into the sweet face of the little, cooing babe, and contemplating what might have been had they persisted in their criminal design. But alas! alas! too often the advice and pleadings of a conscientious physician are disregarded and the helpless little life in utero is crushed out. Oh, *what a dastardly, cowardly wicked act!*

A few women know how to produce an abortion, and produce it upon themselves, but let it be said, to the shame and disgrace of the medical profession, a vast majority of criminal abortions are the dastardly work of physicians—shall I say reputable physicians? If the commission of crime and covering it up under the cloak of professional secrecy is reputable, then I answer yes. When I say that a vast majority of criminal abortions are the work of physicians I do not wish to be understood to say that a majority of physicians produce abortions, for this is not true. It is fully due to the noble workers in the ranks of my profession to say that a large majority hold the same views I do myself, and would not, under any circumstances, take the life of the fetus in utero any quicker than they would the life of an infant at full term; but in every town and village of two or three thousand or more inhabitants there is some fiend in human form who most unworthily affixes M. D. to his name, and who not only will produce an abortion upon any woman who applies to him, but will teach women how to do it themselves. The fee is \$50, sometimes \$100, and sometimes as a special favor he will do it for \$35. He will commit a felony as a special favor. God pity him!

J. Charles Cameron, consulting physician to Montreal Hospital, who has contributed to the literature of forensic medicine, says the practice of abortion is common among savage and semi-civilized nations, as well as among the most civilized. If he is authority, then this is true, but I am unable to corroborate his statement in other literature. The Mosaic law, so complete and wise in its provision, nowhere mentions criminal abortion, nor is any mention made of punishment of the same.

There are many means used for the production of criminal abortion. These can be divided into two classes: first, medicinal; second, mechanical. The first consists in the administration of drugs; the second, in the use of bougies,

sounds, curettes, and other similar instruments. The drugs belonging to the first class are called abortifacient or ebolic. At the head of these stands ergot; other drugs are aloes, savin, hellebore, tansy, and gossypium, or cotton root. None of these are reliable and many unreliable, and in large doses dangerous. Ergot is the only really ebolic drug; the others, if they produce abortion, do it by producing catharsis or emesis, or both, followed by a general gastro-intestinal and pelvic irritation,—a condition which impairs health and sometimes threatens life. While ergot is the only true ebolic, yet it oftener fails than it succeeds. Ergot will undoubtedly increase the force of uterine contractions, and in this it is quite reliable, but as a rule it will fail to originate them.

The writer knew a woman several years ago who took two ounces of Squibb's fluid extract of ergot in thirty-six hours time with the determination to produce abortion. This was followed by a most violent attack of diarrhea, and the patient was extremely sick, yet she went on to full term and gave birth to a beautiful child who grew to be one of the prettiest girls I have ever seen.

The health of many women has been shattered, and the victims hurried to an early grave, by the injudicious administration of these toxic drugs with criminal intent. I am glad to say that physicians do not often prescribe or administer abortifacient drugs with criminal intent. They know how unreliable they are, and how dangerous to health and life in large doses.

The second method of procuring abortion, namely, instrumentation, is resorted to by quacks, midwives, and, far too often, by physicians. Probably the instrument most often used by quack doctors and midwives, is the gum-catheter, and it not infrequently happens that the uterus contracting upon this rather unyielding foreign body causes a perforation of the uterus, when a fatal peritonitis follows; and inflammation of the bowels is found upon the record as the cause of death. The writer has known three such cases in the hands of a quack, and there are many that never come to light. Sometimes women themselves will get hold of a gum-catheter, crochet needle, or other like body, and introduce it into the uterus for the purpose and intent of producing abortion. This is an extremely dangerous operation. The writer once removed from the abdominal cavity, by means of a laparotomy, an ivory penholder that had been introduced into the uterus by the patient herself, and having perforated it passed into the peritoneal cavity. A timely operation saved her life, and

she made a good recovery. She was not pregnant, and never had been, although she thought she was.

Abortion can be produced with comparative safety by a competent physician under the strictest asepsis, the patient being put to bed and given the care of a good nurse. This is rarely done, for a reputable hospital will not receive such patients when the intent is criminal, and the secrecy which must surround the case in the home prevents the carrying out of asepsis with rest in bed, and the post-operative care which such a patient should have. When an abortion is justified all these safety precautions can be thrown around the patient.

I wish to make more emphatic by repetition that an abortion is only justified when pregnancy or childbirth seriously threatens the life of the mother.

There is another class of pregnant women that friends and relatives claim justification for. To this class belongs the girl of respectability whose father, mother, brothers, and sisters go in the best class of society, and some irresponsible wretch has seduced her, and she is pregnant. She cannot marry him—perhaps he is already married, or, if not, he has skipped to parts unknown, and to have him arrested, if he can be found, would give publicity to the whole affair. To go on uninterrupted will, in time, of necessity, give publicity, and will bring disgrace, shame and sorrow upon the poor unfortunate girl and her family. This is the story that the doctor must listen to; yea, more—the little fructified form in the womb of the respectable girl has no life, and any price named by the physician will be paid. A tempting bait for the doctor who needs money!

I am profoundly sorry for such a girl, and she will always receive the most kind and considerate treatment at my hands, and I shall always do all I can to assist her to some good lying-in hospital where she can be well cared for until the child is born, and cared for in some foundling hospital where it, in turn, will receive the best of care and a good home, while the mother returns to her home, and the public will know nothing about it. This has been many times done; it is humane and perfectly legitimate. But to produce an abortion upon this respectable girl is morally and legally as great a crime as to produce an abortion upon the married woman, who should bear children, or upon the prostitute. In either case it is, at least, taking the life of a perfectly helpless little spark; it is wrong, it is wicked, it is cowardly.

The crime of criminal abortion has become an

enormous evil in our country. Accurate statistics cannot be secured, but certain it is that, could the annual record be uncovered, it would startle the most unscrupulous. Who is responsible? Let it be said with shame and covered heads that the physician is either directly or indirectly responsible for much of this crime. It is an awful thing to face. The physician who can do so much, by example and precept, to lessen or abolish this national crime should act and act vigorously. It is often the case that the physician does not soil his own hands in this criminal work, but will tell the pregnant woman what to do. In this he is accessory to the crime and equally guilty with the principal. Some of you will remember that Harry Hayward was held to be guilty, and was hanged for the murder of Catherine Ging, though at the time the murder was committed he was quietly sitting in the theater-box far removed from the location of the crime.

It is morally wrong and legally wrong for any one to produce a criminal abortion, but it is especially so for a physician to do it. It is an awful thing for a physician who knows so well the evils that follow abortion, who knows so well the heinousness of the crime, who knows so well that life begins with conception, to, in any way, by word or deed, lend his influence to the awful act of destroying the little defenceless human being in embryo.

Lest I might be misunderstood I wish to repeat that while I believe a vast majority of criminal abortions are either directly or indirectly the work of physicians, it is emphatically true that the criminal class of our profession is vastly in the minority. The great rank and file of the profession will under no circumstances produce or cause to be produced a criminal abortion.

Let us hope, let us pray, that the honored sons of Esculapius may array themselves so unitedly against this growing evil in our fair America that the incubus now resting upon our noble profession shall vanish, and a star arise every scintillation of which shall proclaim the most bitter anathemas against a practice so revolting to morality, and over which even the angels in heaven weep.

HEMORRHAGE OR SHOCK

Restlessness, increasing pallor, increasing air-hunger, increasing weakness of the pulse, falling temperature (subnormal), and the ephemeral effect of stimulation, all point to hemorrhage rather than shock. In addition, there is often some local sign or symptom.—American Journal of Surgery.

THE OBJECTIONABLE INFLUENCE OF PROPRIETARY MEDICINES UPON THE YOUNG PRACTITIONER*

BY W. S. FULLERTON, M. D.

ST. PAUL

A great deal has been said and written within the past year upon the subject of proprietary medicines, which fact in itself shows an awakening on the part of the medical profession to the importance of a correct attitude on its part toward this question.

In this as in all reform movements, constant agitation of the subject is necessary. The commercial interests backing the evil are constantly on the alert with an army of advertisers, traveling salesmen, and sample-men endeavoring in every way to extend their fields, and it behooves us to be equally aggressive in our opposition to everything that tends to detract from the important position which therapeutics should hold in the practice of medicine.

I want to see this subject taken up in every county society in the state, and in all other states, and discussed till the members of the profession, both young and old, are thoroughly familiar with, and are fully alive to, the evils of the system as it now exists. When this comes to pass we shall have taken a long step forward toward our emancipation from a habit which is anything but creditable to our intelligence as a body of educated men practicing a scientific profession.

I shall employ the word "proprietary" in a restricted sense as applied to the ready-made prescriptions, the compound polynomial mixture of unknown composition.

Proprietarys of a certain class, definite chemicals, such as phenacetin, are not objectionable from my point of view any more than is strychnia or morphia. Proprietarys of this class unofficial in one decade become official in the next, and the use of them presupposes knowledge of their properties on the part of the prescriber. The favorite prescription of some old practitioner—Basham's mixture, e. g.—is not objectionable when prescribed with the knowledge of its ingredients, their proportions, and properties, and with a definite object in view to be attained, but becomes extremely so when exploited by some manufacturing pharmacist under a name only, with formula suppressed and labeled with the printed list of indications for use. There are hundreds of such proprietarys clamoring

for recognition from the medical profession, and it is this class which has an objectionable influence, particularly upon the recent graduate.

There can be no reasonable doubt of the beneficial action of drugs in therapeutics, therapeutic nihilists to the contrary notwithstanding, but this action to be beneficial to the patient implies sufficient knowledge on the part of the prescriber. As a rule, the less the knowledge the more pronounced the nihilism.

If surgery were taught in the same dilettante way that materia medica is in too many of our medical colleges, surgical cases would be to a great extent in the hands of the instrument makers, who would be instructing the surgeon through their commercial travelers as the medicine houses are attempting to do with the general practitioner. Where materia medica is neglected in college the young graduate enters the field of practice with the idea, more or less firmly fixed in mind, that the matter of therapeutics is of secondary importance and that so far as medicine goes, so long as he gives something for the patient to take at regular intervals, he has fully met that particular requirement. It is the young man of this class who is particularly susceptible to the influence of the proprietary-medicine man and the nostrum vender, and who soon becomes a mere distributing agent. The commercial instinct, interests, and methods of the manufacturing proprietor keep him well supplied with literature and samples. If he reads the one and uses the other it is not long before he is adding to the bulk of the druggist's prescription file by his orders for "Seng," "Diovi-burnia," and "Aletris Cordial," or some other nostrum. One cannot handle pitch and remain undefiled, and the longer you play with it the dirtier you get, so the young graduate who begins to toy with proprietary medicines and literature soon forms a habit which if persisted in effectually destroys his capacity for scientific therapeutic investigation or clinical observation. He becomes utterly worthless to therapeutics as a branch of our art, and finds his niche in the therapeutic "Hall of Fame" as a testimonial writer.

There is much need of improvement in the manner of teaching the subject of materia medica and therapeutics in our medical schools. At

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present the teaching is too didactic. The subject is dry and uninteresting, and amounts to the student committing to memory certain facts and figures of dosage as he has learned certain events and dates in history. This is the poorest possible way to gain a practical working knowledge of any subject.

There should be in every medical college a well equipped laboratory devoted to the practical illustration of the action of drugs, and time enough should be devoted to work in it to make the student thoroughly familiar with their physical properties and other qualities. Under the present system a student may leave college without having even seen the drug which he is supposed to write upon in his state board examination and to use in his practice. Is it any wonder that such men fall into the proprietary medicine habit? They are furnished with preparations by the detail man *ad lib.* These they see, taste, handle, read about, and often believe too much of what they read, and, in the end, use them with more or less satisfaction. The point is that they have, through the commercial enterprise of a manufacturing proprietary medical house, been made familiar with a certain product.

Our medical colleges and teachers should profit by the example set by the proprietary medicine men and do more sampling among the undergraduates with pharmacopeal preparations. Furthermore, the teaching of therapeutics should be more intimately associated throughout the last years of the course with clinical medicine as applied therapeutics. I think that the teaching of drug therapeutics should be very markedly along the line of active principles, and that we should try to get into the habit of using them. The argument that they do not fully represent the drug is not, I believe, a valid one. No one claims that they do, and the point is not material. The active principles are definite bodies each possessing its own physical characteristics and therapeutic action, and as such should be studied and applied. Such a course would send out better equipped men who would know the use of their working tools and how to use them, therapeutics would be placed upon a more definite and scientific footing; and there would be fewer therapeutic nihilists and less temptation to turn to the fraudulent proprietary.

Finally, the profession at large is bound in justice to itself and to the public, to demand that the young man seeking admission to its ranks be properly educated in the fundamental branches of medicine. Organization, through county and state societies and co-operation of these societies with state examining boards, enables us to make such a demand with confidence that it will be heeded by the teaching bodies.

Let us then awake to our duty, and let higher education be our watchword all along the line.

DISCUSSION

DR. J. F. SCHEFCIK (Minneapolis): I am glad Dr. Fullerton has read this paper before us. I think the paper is very instructive and one that we should all heed. The subject, as he has brought it out, is one of the utmost importance to all of us, and particularly to those who have just recently come from a medical school. The doctor has thoroughly covered all the points, but I want to emphasize particularly what he said about teachers. I have had some experience in teaching materia medica, and I have looked into the subject closely because I have had a more or less extended experience in the preparation of drugs and as a druggist of a number of years' experience, besides teaching, and I know a great many students have left the medical school without knowing the drug they are prescribing, and are without a clear idea and a full realization why resort is had to that particular drug. I want to emphasize what Dr. Fullerton brought out, that the student must know and be familiar with the drugs he handles. It is the only way he can prescribe successfully. The student naturally dislikes the work, because it is dry and uninteresting, and he crowds it all off into a few days' work, and if the subject is called up in a week or ten days he has forgotten all about it. I think the fault is in the teaching, and an improvement must be made along educational lines. Let us teach the student materia medica and therapeutics, instead of delegating this duty to the interested manufacturer.

DR. J. W. ANDREWS (Mankato): The gentlemen who represent the different drug houses are usually very gentlemanly. They come into our offices and seek an audience with us, and it seems a little discourteous to refuse to see them, but it is a shame to the medical profession that we use their drugs as much as we do, and a greater shame that we listen to their stories at all. I do not speak of every medicine, but generally speaking.

A certain drug was put out by a house a few years ago, and great claims were made for it along certain lines. An agent called on me and asked me to use the medicine. I told him I did not care to use it, and he asked for my reason. I told him the first great reason was that I did not know what was in it, and that I would not prescribe anything for my patients if I did not know what it was. He said he would give the formula to me, and he did. I soon sent the formula to another reliable house and asked that house to put me up a quantity of the same medicine and send it to the druggist, and when it came it was very unlike the first. I do not believe the house of Parke, Davis, & Company would impose upon us, and there are other reliable houses that would not, but it is a shame for the medical profession in this day and age of the world, educated as we are, or ought to be, to use a medicine that some druggist or some physician who has failed in practice puts up and then comes around and tells us we ought to use it, and we do use it. He has a specific for a certain disease, and it is too bad that so many physicians will listen to what he says, and for the preparation before he leaves town the prescriptions go to the druggist. The next traveling man comes around, and the same thing is repeated. There are some good houses like Wyeth Brothers and Parke, Davis, & Company that prepare medicines with the formula, and correctly. I believe it is very proper for us to use such.

Those medicines that are given in very small doses, like digitalin and strychnin, are better put up by some of those houses. I never write a prescription of that kind, but what I write the formula. Take this prescription, for instance; aloin 1-5, belladonna 1-8, strychnin 1-60. In that way a physician is entirely familiar with the formula; he knows it is correct and he knows what

he is giving his patient.

I do not believe that one-half of the cordials, laxatives, and other things of the kind that are put out by various houses have labels on them, and if they do we are not certain they are reliable. Let us, as intelligent physicians, stop that kind of practice. (Applause.)

PODAGRA*

BY H. L. STAPLES, A. M., M. D.

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MINNEAPOLIS

This is the first paper on the subject which has been presented before the Association to my knowledge, and I have presumed that its history might be interesting, and some remarks concerning its manifestations and treatment instructive.

Podagra, or gout, was as well known in olden times as at present. The first term is the more appropriate. *Pod* means foot, while *agra* is derived from a Greek verb that means a seizing upon, or pouncing upon, as applied to birds or beasts of prey; hence *podagra*, a pouncing or seizing upon the foot, the locality first affected in ninety per cent of the cases.

Gout is derived through the French *goutte*, from the Latin *gutta*, a drop, referring to the old pathological doctrine, that it was a dropping or instillation of some morbid fluid into the joint. Hippocrates thus speaks of it in his aphorisms: "A young man does not take the gout until he has indulged in coition. Eunuchs do not take the gout. A woman does not take the gout unless her menses be stopped." Aretæus exclaims: "None but the Gods can understand it." While a Greek epigram reads "of limb-relaxing Bacchus and limb-relaxing Venus is born a daughter, the limb-relaxing Gout." Celsus and Galen described the disease, while Seneca attributed its prevalence among the Romans under the Emperors to debauchery and overindulgence. The baths of Caracalla, one of the most magnificent architectural structures of antiquity, were constructed chiefly for the relief of this malady. Horace, in a satire, thus refers to the condition. I employ the translation of Sir Theodore Martin:

"Then that distinguished diner-out,
Old Volanerius, when the gout—
It served him right—had knotted so
His finger joints, he could not throw
The dice himself, a man engages
To throw for him on daily wages."

Lucian, in his *Trago Podagra*, exclaims:

"Who does not know me Gout the unconquered,
Goddess of all earthly ills,
Whom neither Apollo, doctor of all Gods celestial,

Nor the son of Apollo, the most learned
Esculapius, is able to expel."

The Arabs and Monks, during the middle ages, sang the praises of colchicum as a specific for the arthritis. The greatest writer on this subject was Thomas Sydenham, who died in the year 1689, and who suffered greatly with the trouble. "For humble individuals like myself there's one poor comfort, that gout, unlike any other disease, kills more rich men than poor, more wise men than fools." Another writer says: "Emperors and kings have known its power, doctors and surgeons felt its lance, pontiffs have groaned in its grasp, while the priest, the monk, and the red-robed cardinal have roared with pain when crushed within its clamps of steel." Among great poets, John Milton died of gout "struck in," and Tennyson passed away in a similar manner.

Sydenham's description of an acute attack is wonderfully depicted: "About two o'clock in the morning the victim is awakened by a severe pain in the great toe, more rarely in the heel, ankle, or instep. The pain is like that of a dislocation, and yet the parts feel as if cold water were poured over them. Then follow chills and shivers and a little fever. The pain, which at first was moderate, becomes more intense. Now it is a violent stretching and tearing of the ligaments, now it is a gnawing pain like that of a dog, now a pressure and a tightening. The pain is not abated for twenty-four hours, when a gentle perspiration is succeeded by sleep, the patient upon awakening is freer from pain and finds the parts recently swollen. Later it attacks the hands, wrists, elbows, knees, and other parts. Sometimes it distorts the fingers until they look like a bunch of parsnips. Then you

*Read before the Minnesota State Medical Association, June 20 and 21, 1906.

have chalk stones, like crabs' eyes, exposed to view. Lastly the peccant matter lodges in the viscera, involves their structure, impairs the organs of secretion, leaves the blood stagnant, thick and feculent, prevents the discharge of the gouty matter on the extremities, makes life worse than death, and finally brings on death as a relief. Totum corpus est podagra. The whole body is podagra."

Says Sidney Smith: "When I have the gout I feel as if I were walking on my eyeballs."

It is inherited in 75 per cent of the cases. In the young and women nearly always so. In many English families it has been handed down from father to son for centuries. The self-made plebian may indulge to great excess in eating and drinking, yet die an old man without gout, but he has sown the seeds for his posterity. "The fathers have eaten sour grapes and the children's teeth are set on edge." "I call my gout," declares Lowell, "the unearned increment from my good grandfather's Madeira, and think how excellent it must have been, and sip it cool from the bin of fancy and wish he had left me the cause instead of the effect."

Alcohol ranks first among the predisposing causes, and the fermented liquors are markedly more injurious than the distilled. Port, burgundy, champagne, porter, and ale are the most harmful, while the light sour wines and light pure beers have little effect towards producing the disorder.

Most American beers are fearfully and wonderfully made, are prone to cause fermentation and gastric disturbance, and are far from being confined to the hops, malt, and water of the German product.

Excessive use of meats and other rich foods with insufficient exercise, plays an important part. To quote Sydenham: "Great eaters are liable to gout, and of these the costive more especially." Man proverbially eats more than he can properly assimilate. The disease is by no means confined to the rich. Poor man's gout is produced by poor food, bad hygienic surroundings and an excessive use of malt liquors. To this must be added lead poisoning, as shown in plumbers, painters, tinnerns, typesetters, and workers in lead mills. Many of these have an inherited predisposition to the disease.

The exciting causes are excesses in diet, over-indulgence in heavy wines or fermented liquors, temperature changes, blows, sprains, and other injuries, a tight shoe, nervous exhaustion, worry, anger, anxiety, sexual excess. "When I return to my studies, the gout returns to me," says Sydenham, "and a fit of the gout is a fit of bad temper." The cruelties practiced by William the Conqueror, Henry the Eighth, and other rulers

of the Middle Ages, were largely on account of fits of irascibility induced by the gout poison.

In practice the irregular types of gout or goutiness are much more frequently observed. Duckworth's definition should be stated. Gout manifesting itself anywhere but in a joint, is to be considered irregular or incomplete. It is more prone to occur in those who never have had joint attacks but who are predisposed by inheritance or mode of life. Cramps in various muscles and itching or tingling of feet or hands are common. All forms of irregular gout are due to the precipitation of sodium biurate in the organ or tissue affected. Its manifestations are extremely varied and require careful study. Arteriosclerosis is an early symptom with, later on, cardiac hypertrophy from vascular tension. Pre-cordial pain, vertigo, palpitation, and dyspnea are not uncommon.

From the sclerotic changes in the coronary arteries angina or myocarditis may result. Deposits of sodium biurate are found at necropsy in the heart valves and blood vessels, also in the meninges of the brain and spinal cord. Gouty phlebitis is a common occurrence. Obstinate bronchitis often associated with asthma and emphysema, may precede a typical gout for many years. The acid dyspepsia, pyrosis, and intestinal colic are familiar symptoms. Neuralgias, migraine, neuritis, insomnia, and intense mental depression are the most prominent nervous manifestations. The last is often greatly relieved by a blue pill. Dryden thus interpreted it:

"The yellow gall that in your bosom floats
Engenders all these melancholy thoughts."
Shakespeare referred to it as follows:
"What doth ensue
But moody and dull melancholy
Kinsman to grim and comfortless despair
And at her heels a huge infectious troop
Of pale distemperatures and foes to life."

The ophthalmologist must remember that no form of glasses will relieve the various ocular disturbances, unless the patient is constitutionally treated.

Probably some kidney affection precedes every gouty manifestation. This may be transient if the exciting cause be removed, or it may become structural. The convoluted tubes are the seat of the disease, while the increased interstitial tissue is a secondary change. Furbringer's statement should be remembered: "One must not believe that the gouty kidney is always accompanied by a deposit of urates. On the contrary, one has met with undeniable cases of gouty kidney without gouty deposits in the joints, such as Ebenstein's primary gouty kidney. There is increased frequency of micturition, and the urine usually contains a small amount of albumin. In

one of my patients, the bladder occasionally becomes intensely irritable with scanty acid urine of high specific gravity."

These patients are peculiarly liable to eczema, and this may be the sole manifestation of gout. The face flexures of joints, scrotum, and backs of the hands and feet are most frequently affected. A clerk of English ancestry occasionally appears at my office with an eczematous face resembling a copper kettle, and with a limping gait. Knowing his weakness for heavy wines, I repeat to him the old refrain:

"Burgundy rose! Burgundy rose!

'Tis a very bad thing for the tips of your toes!"

Glycosuria is often found with some form of irregular and seldom with the acute articular attack. Metastatic gout generally occurs in those of a feeble constitution or debilitated condition. It may be due to the deposit of sodium biurate in the viscous acting as an irritant, or it may be a vasomotor disturbance. The stomach, intestines, and heart are most frequently involved. Apoplexy is the most frequent symptom in brain complications.

As regards its pathogenesis, our knowledge is still incomplete and unsatisfactory. "The more closely I have thought upon gout, the more I have referred it to indigestion," said Sydenham. "If the uric acid theory is abandoned we are sailing upon uncharted seas," remarked Allbutt recently. We cannot at present abandon the explanation that a disturbance of uric acid metabolism is present in most cases, probably both intestinal and hepatic. Certain purins and other poisonous bodies are produced which lead to an auto-intoxication. Nearly all investigators admit that a large excess of uric acid exists in the blood. Immediately preceding an acute attack, there is a marked diminution in the amount of uric acid eliminated in the urine. During and after an attack it is increased. The joint manifestations are due to the deposition of uric acid compounds of the blood in the form of crystalline sodium biurate. Tophi may develop at any place where cartilage exists, as the helix of the ear, the nose, eyelids, and larynx, the tendo Achillis the metacarpophalangeal and metatarsophalangeal joints. They may strongly resemble the subcutaneous nodules of rheumatism. In cartilage the temperature is lowest and the circulation poorest, thus favoring the deposit of sodium biurate. In lead poisoning the uric acid theory does not well apply. Possibly gout does not represent an entity, but a galaxy of diseases not yet differentiated.

TREATMENT

"We should write few prescriptions, but regulate the habits of the patients. Live on a

six pence a day and earn it," said Sir John Abernethy, and should not forget Dicken's sapient advise as given through Sam Weller: "Marry a vidder with a good long tongue and a decent idea of using it." Bishop Berkley advocated warm tar-water, "by which it pleased God to deliver an aged and gouty clergyman from the jaws of death." Gargantua and other worthies strongly urged a rabbit foot. A foot to cure a foot, *Similia similibus curantur*. For the paroxysm the limb should be slightly elevated and warm packs applied to the joints. The following lotion is as good as any: Sodii bicarb. ʒj; tinct. opii ʒj; linimenti belladonnæ ʒij; aquæ, q. s., ad ʒviij. Mix a little with equal parts of hot water and pour on flannel or absorbent cotton about the part affected. The various muds so much exploited are worthless. Do not apply iodine blisters or make incisions on account of the danger of erysipelas or an inflamed joint and ankylosis. Internally, colchicum stands first and foremost. Its name was given it by the old Greeks from Colchis in Asia Minor. They knew its remedial properties as did the monks and Arabs during the middle ages. The wine is the most active and should be given in large doses of 30 to 40 minims three or four times a day, combined with 20 to 30 grains of citrate of potassium, which increases the volume of urine and diminishes its acidity.

Colchicum may act in a favorable manner by increasing the quantity of urine excreted, or it may cause a renal congestion when it is dangerous. Great care should be exercised in its use where marked interstitial nephritis exists. Serious apoplexy and pulmonary edema are not infrequently the result of the secret remedies much employed by gouty individuals, all of which contain some form of colchicum. Most all sudden deaths in this disease have a renal origin. The colchicum dose should be reduced to 10 to 20 minims three times a day as soon as the pain is relieved. It is a nauseant and depressant, and its action should be carefully observed. Colchical and the salicylates are of little value, while piperazine is worthless. Calomel and soda or blue pill are important the first night on account of their cholagogue effect. For sleep, hyoscyamus or veronal may be given or morphin hypodermatically if pain be excessive. Opium should be avoided if possible as it diminishes the amount of urine, disturbs digestion, and retards hepatic metabolism.

The diet is of special importance. At first milk, milk and Vichy, bread and milk, rice, tapioca, soft toast, gruels, junket, whey, koumyss, chicken or oyster broths. The diet is increased as the symptoms disappear. Soft-cooked eggs, fresh broiled fish, bacon, milk puddings, baked custards, etc. Later, chicken, chops, rare steak,

potatoes, and fresh green vegetables. Avoid asparagus, strawberries, rhubarb and cherries. The avoidance of salt is important, as it irritates the kidneys and diminishes the solubility of sodium biurate, thus causing its precipitation.

A large glass of hot water containing a slice of lemon should be taken morning and at bed time. The use of water both internally and externally must be very liberal. The quantity of fluids taken daily should be from three and one-half to four and one-half pints. Lithia tablets and litmia waters are of no great value, for they disturb the stomach and the lithia salts act as a cardiac depressant in many cases. An abundance of pure water is all that is necessary.

In regard to the chronic condition, the temperament, idiosyncrasies and constitution must be considered. Bear in mind Moxon's witty expression: "It is quite as important to know what kind of a patient the disease has got as to know what kind of a disease the patient has got." These patients are repentant but not obedient. To quote Rabelais:

"The devil was sick, the devil a monk would be;
The devil was well, the devil a monk was he."

Intemperance and intoxication are much more frequent in eating than in the use of liquors, yet without the attached opprobrium. The meat breakfast is contra-indicated for all who lead a sedentary, intellectual life. We are not in a physical condition to assimilate properly highly nitrogenous food. Recent revelations regarding the wonderful Chicago sausage, should cause a diminished consumption of that delicious fruit at a morning repast. It will surprise one on investigation to ascertain how many well-to-do people in this Northwest eat meat three times a day. This at dinner is often mixed with Burgundy, port, or champagne and other heavy wines or ales.

"In joy and in glee your revels shall be
Till a day shall arrive which you darkly forsee."

If wine is thought to be imperative but one kind should be served. The finest champagne and the choicest Bordeaux may be delightful in passing the palate, but often quarrel sadly when they arrive in the stomach.

A purely vegetable diet is a polite method of starvation not to be recommended, but meat should, as a rule, be restricted to the principal meal. The English advise the four F's, farinaceous foods, fish, fat, and fruit with vegetables. Spinach and cooked celery are especially useful. The distinction between white and red meats has long passed into oblivion. Pickled and salted meats are inadvisable.

As much exercise as possible, short of fatigue, should be taken in the open air, and baths and

springs like Carlsbad are useful in the plethoric with congestion of the liver and portal system. Potassium iodid is a cardiac tonic and alterative, useful also in the chronic inflammatory thickenings and gouty neuralgias.

These patients do not admit of frivolous or experimental surgery. Their kidneys do not need to be fixed or decapsulated. The prostate gland is particularly prone to enlargement and deserves careful attention. Where the trouble is not severe, a southern climate during winters, attention to the bowels, a hard-bottomed chair (apparently a small matter but important), and occasionally an irrigation of the bladder with weak solutions of silver nitrate or zinc sulphate, will greatly postpone the catheter period. Later on, prostatectomy by experts must be considered, but never in the weak and debilitated. Finally, let us deprecate and condemn Omar's philosophy, which many follow:

"Ah, fill the cup! what boots it to repeat,
How time is slipping underneath our feet?
Unborn to-morrow and dead yesterday.
Why fret about them if to-day be sweet?"

Let us rather preach the doctrine as written in Ecclesiasticus:

"Show not thy valiantness in wine; be not unsatiable in any dainty thing, nor too greedy upon meats. By surfeiting have many perished, but he that taketh heed, prolongeth his life."

THE TREATMENT OF SYMPTOMS A RATIONAL AND SCIENTIFIC PROCEDURE

Dr. George F. Butler says that a disease is the result of three factors: first, of the determining cause; second, of the condition of the patient at the time that the cause is applied; third, of the general condition of the patient dependent upon his congenital constitution. The existence of aborted forms of disease shows that there are factors which interfere with the self-elimination and with the manifestations of such diseases. The course of the disease, the general constitutional vitality, and the constitutional vitality of the patient at the time of the attack, may be influenced by "symptom remedies." Symptoms at the very least may exhaust general vitality. The conception that treatment of symptoms has no effect on the constitution of the patient, and so on the progress of the disease, is unscientific. The writer urges physicians to have more common sense and optimism even if they are accused by some of being "unscientific."—Medical Record.

size employed by the so-called card system, can be carried in the pocket or surgeon's bag, and a few brief notes made on the first and subsequent visits. By this means it would be a simple matter to keep track of much important data that is usually neglected. As a matter of fact, the majority of physicians are negligent, unmethodical, careless, or lazy when history-taking is suggested. It is very humiliating for the medical man who attempts to discuss a medical topic in a medical society to simply "recall" a few cases. If he were really honest he would admit that he could recall a very limited bit of history of his cases, for the essential points would have escaped his memory unless a memorandum could be referred to. Discussions based upon written histories are valuable, hence the necessity of preserving medical data of all kinds. This leads, very naturally, into the study of epidemiology and a reliable report of epidemics.

THE MODEL MEDICAL SOCIETY PAPER

It must be evident to every careful observer that the *model* paper for a medical society or a medical journal is somewhat different from the average paper now read before our societies or published in our journals. And it must be equally evident to the same observer that this average paper receives but little attention from the average society attendant or journal reader.

But what shall be the *model*? We do not think for a moment that we can define it, but we can, we hope, name some of its characteristics. It must contain something that will add to the general fund of medical knowledge, and although this something may be put in a brief paragraph, it may need a setting, in order to give it clearness and emphasis, that will require, say, two or three pages of this journal. It is in the setting that the average writer errs most and most often. To introduce our hypothetical paragraph with a lot of commonplace matter from an elementary textbook is—shall we dare say it?—the average way of doing things. To follow it up with a lot of conclusions, based upon this and a few apparently correlated facts, increases the length of the paper, to be sure, but it also destroys the paper's interest, if not its value, for deductions from insufficient data are unscientific and uninteresting.

Proper brevity, then, is necessary to maintain, not only the interest of the reader or listener, but the value of the paper.

Definition should also be a characteristic of everything one writes. By *definition* we mean clearness of outline. The man who can report a case of the commonest disease in notably clearness of outline will do more for the progress of medicine than the one who finds the obscure

case, and reports it and writes about it in semi-obscure style. Judge Cooley, of the Ann Arbor law school, added much to his reputation by a brief definition of the word *taxation*.

With these two much inclusive characteristics of the model paper before us, we may well ask what is an interesting subject for a paper before the forthcoming meeting of some local or state society. Fortunately, we have at hand an admirable answer. In his presidential address before the last State Association meeting, Dr. Charles H. Mayo took a big subject ("Surgical Opportunity"). He treated it briefly and with unusual definition, and he ended his address with a short sentence that answers our question: "The coming man is not the surgeon, nor the internist, but the diagnostician."

Although it may seem a divergence, this sentence, which is so full of meaning, is worth considering.

Drs. W. J. and C. H. Mayo are surgeons, and they have made a world-wide reputation. They have made few, if any, original discoveries in either surgery or medicine, and their technic as surgeons is not unequalled; but surgeons of all civilized countries come to Rochester, and go away pleased and satisfied. What have they seen—what have they learned? Certainly something, and something new. It is brilliant diagnosis, made possible by every-day plodding, painstaking observation of symptoms that almost daily come under the eye of the general practitioner. And this diagnosis has given them opportunity to become brilliant surgeons. Then, we say, let us study, in our daily, weary rounds, symptoms,—simple, complex, obscure,—and let us write about them and discuss them with our fellow practitioners, in language brief and clear; and *model* papers will not be wanting in medical societies or medical journals.

REPORTS OF SOCIETIES

SOCIETIES OF THE FIRST COUNCILOR DISTRICT

The four societies of the First District met in Moorhead on September 24 with a good attendance from each society and with a number of Twin City men, Dr. C. W. Meckstroth of Brandon was in the chair.

Mayor Nye of Moorhead welcomed the physicians to the city, and presented an excellent paper on "Medical Jurisprudence."

Dr. O. Th. Sherping, of Fergus Falls, read a paper on "Emergency Surgery."

Dr. M. C. Millett, of Rochester, spoke upon "The Value of Cystoscopy as a Diagnostic

Agent," and gave a clinical demonstration, the patient being furnished by Dr. Paul H. Burton, of Fargo, N. D.

Dr. Thomas McDavitt, of St. Paul, read a paper on "Ulceration of the Cornea."

The next paper was by Dr. Theodore Bratrud, of Warren, on "Treatment of Stomach Ulcer."

Dr. Alex. Colvin, of St. Paul, presented a paper on "Thrombosis in Intercranial Sinuses." Pathological specimens were shown, and the subject was discussed by Dr. W. A. Jones, of Minneapolis.

Dr. A. E. Benjamin, of Minneapolis, read a paper on "Surgery of the Kidney," and the paper was discussed by Dr. S. Marx White, of Minneapolis; Dr. M. C. Millet, of Rochester; Dr. Alex. Colvin, of St. Paul.

Dr. W. A. Jones, of Minneapolis, editor of THE JOURNAL-LANCET, spoke on the subject. "Our State Medical Association and THE JOURNAL."

Dr. Paul H. Burton, of Fargo, N. D., presented a case of carcinoma of the lower jaw.

A vote of thanks was tendered to the contributors of papers and to the visitors.

A banquet and entertainment was given in the evening.

E. R. BARTON, M. D., Secretary.

NEWS ITEMS

Dr. F. L. Kling has moved from Pelican Rapids to Alexandria.

Dr. A. N. Currie has moved from Hatton, N. D., to Portland, N. D.

The new Immanuel Hospital of Mankato will be dedicated on Oct. 31st.

Dr. Charles Rollofson has moved from Peota, N. D., to Ambrose, N. D.

Dr. Walter Goodfellow has moved from Aberdeen, S. D., to Groton, S. D.

Dr. G. H. Lowthian, of Hewitt, was married last month to Miss Camilla Dickey, of the same place.

Dr. W. L. Palmer has moved from Glenville to Albert Lea. Both places are in Freeborn county.

Dr. R. V. Rogers, who has been practicing a short time in Churchs Ferry, N. D., has decided to locate in Penn.

Dr. G. Golseth, of Henning, who has been doing post-graduate work at Chicago, has returned to his work.

Dr. W. W. Keen, of Philadelphia, the eminent teacher and author, was a visitor in the Twin Cities last month.

Dr. Bray, of Virginia, has moved into his new hospital, which he built after the destruction of his old building by fire.

Dr. R. D. Jennings, a homeopath, of Hot Springs, S. D., has been appointed governor and surgeon of the new Battle Mountain Sanitarium.

Dr. W. W. Routh, a homeopathic physician, who was at one time health commissioner of Duluth, died last month in California, at the age of 50.

Dr. H. Holte, of Crookston, has returned from a trip of several months abroad. He spent most of his time in the hospitals of Germany and Norway.

The Worthington Hospital, built by Dr. F. M. Manson, of Worthington, has been opened. The building is very complete and thoroughly equipped.

Dr. E. H. Maercklin has moved from Forman, N. D., to Ashley, in the same state, and will succeed to the practice of his brother, who recently moved to Oakes.

The plans for the Lutheran Hospital at Fargo, N. D., have been approved and work upon the structure will soon begin. The total cost will be about \$50,000.

The Minnesota State Board of Medical Examiners held an examination for candidates the first week of this month. Seventeen candidates took the examinations.

Dr. Aurora W. Giddings, now retired, of Anoka, celebrated his fiftieth wedding anniversary last month. Dr. Giddings practiced forty years in this state.

Dr. Will Flynn, a 1905 graduate of Hamline, has located at Veblin, S. D., taking the practice of Dr. B. W. Shaw, who will go to Boston for post-graduate work.

Miss Martha Karaus, of Rochester, has become superintendent of the hospital at West Duluth, taking the place of Miss Bessie Broeckel, who has gone to Los Angeles, Calif.

St. Raphael's Hospital, of St. Cloud, is making a number of improvements, among them steel porches 8 ft. wide by 30 ft. long, which will make excellent fire-escapes.

Dr. Andrew Moynihan, of Sauk Centre, and Miss Emma Collins, of St. Joseph's Hospital, St. Paul, were married on September 25th, at the home of the bride's parents in Little Falls.

Dr. Ignatius Donnelly, formerly of St. Paul, but now of Butte, Mont., is in line to be the next coroner of Silver Bow County, with all the work that a city of Butte's reputation can conveniently give him.

It is a rare, almost an unknown, thing that we have opportunity to record in these columns that a homeopathic physician is doing post-graduate work. Dr. A. C. Clark, of Aberdeen, is in Chicago engaged in such work.

At the last meeting of the Winona County Medical Society, Dr. J. W. Scott, of St. Charles, presented an unusual and interesting case of infantile paralysis, exhibiting the patient, a ten-year-old girl, with lower limbs completely paralyzed.

The dedication of the new Asbury Hospital building on the 6th inst. was an important event in Minneapolis medical circles. The reception brought together a throng of earnest men and women who wished to express their good-will toward the philanthropic leaders, both lay and medical, who have laid the foundation of this splendid hospital. The amount raised was large, but it was only an earnest of what will yet be done for this enterprise. We congratulate Dr. J. W. Little and his entire staff on the brilliant outlook for Asbury, and all other hospitals of the city on the impetus they will gain from this event. Editorial notice is made of the opening.

PRACTICE FOR SALE

A good practice in a growing village in a farming country which is thickly settled, is offered for sale by a physician who wishes to locate in a city. No other physician in place; surrounding territory is large; an exceptional opportunity. My house is modern. Price upon application. Address M. L., Care of THE JOURNAL-LANCET.

PRACTICE FOR SALE

My practice in a village of about 500, in a good farming community in the central part of Minnesota, is offered for sale at a very reasonable price. Address E., Care of THE JOURNAL-LANCET.

X-RAY MACHINE FOR SALE

A Wagner mica-plate X-ray machine in good condition; complete outfit—cheap. For particulars, address R. E. F., No. 2 Syndicate Block, Minneapolis.

FOR SALE

A good general practice of over \$3,500 annually in town of about 400 in Southwestern Minnesota; first-class farming country; nearest competition 14 miles. Practice goes to purchaser of office and business lots and office furniture with some appliances; all for \$1,500; \$1,000 cash, balance on time if desired. Selling because of health of family.—Address C., care of this paper.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH OF MINNESOTA FOR THE MONTH OF JULY, 1906

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF JULY, 1906

STATE INSTITUTIONS.	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Fergus Falls, Hospital for Insane.....	4	4														
Rochester, Hospital for Insane.....	5	2														
St. Peter, Hospital for Insane.....	5															
Anoka, Asylum.....	*															
Hastings, Asylum.....	*															
Faribault, School for Deaf.....	*															
Faribault, School for Blind.....	*															
Faribault, School for Feeble Minded.....	1															
Owatonna, School for Dependents.....	*															
Stillwater, State Prison.....	1															
St. Cloud, State Reformatory.....	*															
Red Wing, State Training School.....	*															
Minneapolis, Soldiers' Home.....	2	1														
Totals.....	18	9														

*No report received.

REPORTED FROM 71 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF JULY, 1906

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Deaths														
				Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Albert Lea	4,500	5,657	5														1	
Anoka	3,769	4,053	2															
Austin	5,474	6,489	6		2													
Barnesville	1,326	1,566	1															
Bemidji	2,183	3,800	3															
Blue Earth	2,900	2,364	2															
Brainerd	7,524	8,134	12		2													
Chaska	2,165	2,085	*															
Chatfield	1,426	1,300	1															
Cloquet	3,074	6,117	4															
Crookston	5,359	6,794	10		1													
Detroit	2,060	2,149	3															
Duluth	52,968	64,942	53		13		1	2										
E. Grand Forks	2,077	2,489	*															
Ely	3,712	4,045	9			1	2											
Eveleth	2,752	5,332	9															
Faribault	7,868	8,279	4		1													
Fairmont	3,440	2,955	*															
Fergus Falls	6,072	6,692	3		1													
Granite Falls	1,214	1,340	2															
Hastings	3,811	3,810	*															
Hutchinson	2,495	2,489	1															
Jordan	1,270	1,311	2															
Lake City	2,744	2,877	2															
Litchfield	2,280	2,415	*														1	
Little Falls	5,774	5,856	7															
Luverne	2,223	2,272	*															
Le Sueur	1,937	1,842	*															
Madison	1,336	1,604	*															
Mankato	10,559	10,996	16		1	2	3											
Marshall	2,088	2,243	*															
Melrose	1,768	2,151	*															
Minneapolis	202,718	261,974	232	21	5	9	2	1		1	1		2	1	3	35	15	1
Montgomery	979	1,281	2															
Montevideo	2,146	2,595	2															
Moorhead	3,730	4,794	1		1													
Morris	1,934	2,003	*															
New Prague	1,228	1,419	2		2													
New Ulm	5,403	5,720	3															
Northfield	3,210	3,438	1															
Ortonville	1,247	1,612	*															
Owatonna	5,561	5,651	8		1													
Pipestone	2,536	2,885	1															
Red Lake Falls	1,885	1,797	*															
Red Wing	7,525	8,149	4															
Redwood Falls	1,661	1,806	*															
Rochester	6,843	7,233	9															
Rushford	1,100	1,133	1															
St. Charles	1,304	1,238	*															
St. Cloud	8,663	9,422	7		2													
St. James	2,607	2,320	1															
St. Paul	163,632	197,323	188	16	4	10		4										
St. Peter	4,302	4,514	2															
Sauk Centre	2,220	2,463	*															
Shakopee	2,046	2,069	*															
Sleepy Eye	2,046	2,312	*															
So. St. Paul	2,322	3,458	3															
Stillwater	12,318	12,435	6		1													
Thief River Falls	1,819	3,502	1															
Tower	1,366	1,340	*															
Tracy	1,911	2,015	*															
Virginia	2,962	6,056	*															
Wabasha	2,528	2,619	*															
Warren	1,276	1,640	2															
Waseca	3,103	2,838	*															
Waterville	1,260	1,383	*															
West St. Paul	1,830	2,100	1															
Willmar	3,409	4,040	3		2													
Windom	1,944	1,884	1															
Winona	19,714	20,334	12		1	1												
Worthington	2,386	2,276	2															

*No report received.

REPORTED FROM 67 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF JULY, 1906

VILLAGES	Population of U. S. Census of 1906	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrhoeal Diseases of Children	Cancer (?)	Puerperal Septicemia
Ada.....	1,253	1,515	*															
Adrian.....	1,258	1,184	1															
Aitkin.....	1,719	1,896	3															
Akeley.....		1,636	1															
Alexandria.....	2,681	3,051	*															
Appleton.....	1,184	1,321	*															
Belle Plaine.....	1,121	1,301	*															
Benson.....	1,525	1,766	1															
Breckenridge.....	1,282	1,850	*	1														
Buffalo.....	1,040	1,124	*															
Caledonia.....	1,175	1,405	*															
Canby.....	1,100	1,505	1															
Cannon Falls.....	1,239	1,460	1															
Cass Lake.....	546	1,062	*															
Chisholm.....		4231	4															
Dawson.....	962	1,056	1															
Delano.....	967	1,023	1															1
Fosston.....	864	1,000	1															
Frazer.....	1,000	1,146	*															
Glencoe.....	1,780	1,805	*															
Glenwood.....	1,116	1,718	*															
Graceville.....	856	1,032	*															
Grand Rapids.....	1,428	2,055	2												1			
Hallock.....	805	1,014	*															
Hibbing.....	2,481	6,566	14	2													2	
Jackson.....	1,756	1,776	*															
Janesville.....	1,254	1,205	*															
Kasson.....	1,112	1,049	*															
Kenyon.....	1,202	1,252	*															
Lake Crystal.....	1,215	1,231	1															
Lanesboro.....	1,102	1,041	1															1
Long Prairie.....	1,385	1,256	1															
Madelia.....	1,272	1,290	2				1											1
Milaca.....	1,204	1,319	2															1
Mountain Lake.....	959	1,063	*															
North Mankato.....	939	1,129	1															
North St. Paul.....	1,110	1,400	2															
Olivia.....	970	1,019	*															
Osakis.....	917	1,056	*															
Park Rapids.....	1,313	1,719	2															
Pelican Rapids.....	1,033	1,095	2	1														
Perham.....	1,182	1,366	*															
Pine City.....	993	1,092	2			1												
Plainview.....	1,038	1,140	*															
Preston.....	1,278	1,320	1															
Princeton.....	1,319	1,704	*															
Renville.....	1,075	1,229	*		1													
Rush City.....	987	1,041	1															
Rushford.....	1,062	1,040	1	1														
St. Louis Park.....	1,325	1,491	*															
Sandstone.....	1,189	1,589	*															
Sauk Rapids.....	1,391	1,552	*															
Scanlon.....		1,122	5															
South Stillwater.....	1,422	1,572	1															
Springfield.....	1,511	1,546	*															
Spring Valley.....	1,770	1,573	*															
Staples.....	1,504	2,163	*															
Two Harbors.....	3,278	4,402	2															
Wadena.....	1,520	1,868	*												1			
Wells.....	2,017	1,814	*															
West Minneapolis.....	2,250	2,530	1	1														
Wheaton.....	1,132	1,346	*															
White Bear Lake.....	1,288	1,724	*															
Winnebago City.....	1,816	1,553	*															
Winthrop.....	813	1,031	*															
Zumbrota.....	1,119	1,129	*															
State Institutions.....			18	9														
Other parts of State.....	1,012,328	1,085,886	495	58	4	18	2	5	...	1	6	...	5	1	2	13	30	2
Total for State.....	1,751,395	1,979,658	1223	141	19	51	5	11	...	3	11	...	11	5	12	105	78	4

Still births and premature births, 76 (not included in above totals).
*No report received

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RELATION BETWEEN PATHOLOGY AND GENERAL MEDICINE*

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MINNEAPOLIS

In accepting the kind invitation of the Chairman of the Committee on Program to speak informally on the relation between pathology and general medicine, it appeared to me very desirable to deal with the matter as practically as possible. In order to discuss the matter intelligently, it is, first of all, necessary to know what is included in each. At one time pathology consisted of the study of morbid anatomy, to which the use of the microscope added pathological histology. In the minds of many, it would seem that, even at the present time, this makes the sum total of pathology. Gross and microscopic morbid anatomy are most important, not only from the point of view of the history of pathology, but because it becomes necessary, ultimately, to determine morbid changes which have been brought about, that they may be correlated with the evidences of abnormal or disease processes which were observed during life. Still, post-mortem pathology is only a small part of the field.

Pathology may perhaps be defined as a study of the mechanics and philosophy of disease, or, briefly, the "how and the why" of disease processes. The complexity of the subject and its multitudinous aspects become apparent when attempt is made to analyze these phases.

Etiology or the causation of disease is basic and has to deal with the life-history and bio-

chemistry of the bacteria and protozoa. It demands some training in general biology and chemistry, in order that the details of development of the lower vegetable and animal forms may be thoroughly understood. The habits of any of the animals which may act as carriers of the parasitic lower forms, must also receive attention. Some knowledge of social economy and commercial activity, and of humanity in general, is also imperative, in order that the relation of daily life and occupation of individuals to disease, may be understood.

Experimental medicine, to include infection with microparasites, the excision of or surgical interference with the various organs and systems, the administration of drugs, and, in general, all attempts at the artificial reproduction of disease, rightfully belong to pathology, as do also the complex problems of immunity. In fact, in the words of a friend who was about to deliver the first of a series of lectures to a class, I might say that "pathology includes the whole of medicine except treatment, and that, since antitoxin has been introduced, it is doubtful whether it does not include this also."

The study of disease processes goes far afield, and the tendency is to follow each one of the branches to its minutest ramification. Morgani referred disease to the organ, and Bichat to the particular tissues of the organs, which were affected, and Virchow, the father of "cellular pathology," carried it still farther namely, to the cells which were at fault. Cy-

*Read before the Minnesota State Medical Association, June 19-21, 1906.

tology is receiving more attention every day, and it is likely that much new information will be available when ultraviolet photomicrography becomes more generally used. Pathology is, therefore, divided into the study of the causes of disease, which can be grouped under physical, mechanical, and chemical and the living or vital causes, on the one side, and the cell changes which are induced by these various causes, on the other. The manifestations that such causes are acting harmfully upon the tissues and cells of an organism, constitute clinical symptoms and physical signs.

What should be included under medicine is, perhaps, a question. In general, however, it may be said to be the utilization of pathology in the acquirement of a definite knowledge as to the cause or causes which are operative in a given case in producing the altered metabolism and pathological cell-changes in the individual, and, based upon these, the employment of logical, remedial agents.

Enthusiasts in hygiene believe that in the future all medicine will be largely, if not altogether, preventive medicine, the practitioners being divided into two general classes; namely, those who specialize in public hygiene, who will be in the employment of the government, state or municipality, and those who are engaged in the practice of personal hygiene to include the general practitioner and the consultant in internal medicine. Be this as it may, it is most vital to our advance in real knowledge, that no sharp line between pathology and general medicine be drawn, since the latter includes the whole of pathology plus, as we have seen, the employment of remedial and preventive agencies.

The physician's first duty to his patient is a thorough examination of his physical condition and a careful inquiry, by all available means, into his environmental and personal history. The introduction of such a vast number of special and complicated microscopic, chemical, and physical methods for the examination of blood, sputum, urine, stomach-contents, and various fluids and tissues now makes it almost impossible to know where to begin, unless systematic and logical habit has been acquired. The tendency of the age does not seem to be different from that of previous ages in the desire to discover some one pathognomonic sign or symptom and some specific therapy. It seems to me a word of warning is indicated, and, on more than one occasion recently, I have taken it upon myself to urge that we take care not to abandon the painstaking methods of physical examination employed by the fathers in medicine, in our hurry to take advantage of some of the newer micro-

scopic, bacteriological, physical, or chemical tests. In other words, having trained to the utmost our senses, we should ascertain all which those senses, unaided, can tell us, before we have recourse to the more complicated methods for the determination of specific and minute points. The logical and careful observer will, in this way, determine for himself where the methods which can be employed at the bedside should be supplemented by further laboratory or experimental investigation. If such procedure be not followed, medicine is no further removed from empiricism than in past ages, because if the study of the patient himself does not afford the initial suggestions for further investigation, a haphazard and frantic series of special laboratory examinations is not likely to yield the desired information, except by mere accident.

The laboratory in pathology and in medicine is only one of the fields in which study should be carried out. The patient and his environment, past and present, afford a field which is just as deserving of study and as promising of result. It is the intelligent use of pathology in medicine which is demanded, and, as I have tried to indicate, this does not mean the carrying of all our problems back to the laboratory for solution, but only those problems which cannot be fully solved at the bedside.

In claiming for pathology such a large field, I have served only to magnify medicine, since, in my opinion, pathology should be included, *in toto*, in medicine, and it is not surprising, therefore, that at the last meeting of the Association of American Physicians, we should have such a wide range of papers presented as entirely suitable for the consideration and discussion of physicians. I quote certain of them for illustration:

1. Experiments on Venous Blood Pressure, and Its Relation to Arterial Pressure, in Man.
2. A Case of Varicose Aneurism of Aorta and Superior Cava.
3. Rupture of Thoracic Aneurism into Superior Vena Cava.
4. Experimental Study of Cardiac Murmurs.
5. Further Studies of Experimental Vascular and Cardiac Lesions, Caused by Adrenalin, Etc.
6. Experimental Arterial Degeneration (Changes Produced by Substances Increasing Blood Pressure, as Adrenalin, Digitalis, Nicotine, etc.)
7. Intravenous Injections of Nicotine, with Special Reference to Experimental Arteriosclerosis.
8. Principles of Therapeutics Based on Pathological Physiology.
9. The Therapeutics of Insufficient Kidney Excretion Based on Pathological Physiology.
10. The Physiological Principles of Feeding in Typhoid and in Other Fevers.
11. The Effects of Aperients on the Peristalsis of the Stomach and Intestines.
12. The Therapeutic Advantages of Refined and Concentrated Diphtheria Antitoxin.

13. Hemochromatosis and Diabetes Mellitus.
14. A Case of Essential Pentosuria.
15. A Demonstration of Coccidiodal Granuloma.
16. Thrombophlebitis of Splenic and Portal Veins and Its Relation to Splenic Anemia.
17. Occult Blood in Typhoid Fever.
18. Some Experiments Upon the Digestive Activity of Pepsin in the Gastric Contents.
19. Exophthalmic Goitre Treatment with Specific Sera.
20. The Pathology of Graves' Disease from the Standpoint of Serum Therapy.
21. Phagocytosis of Red Corpuscles.
22. The Enzymes of Inflammatory Exudates.
23. An Experimental Study of Cerebrospinal Meningitis.
24. Some Experiments in Psychotherapy.
25. On Mental Disorders Associated with Acute Chorea.

With such a wide range in pathology, just as in medicine, the necessity of specialization becomes very apparent. Pathology, as such, has never been recognized as a legitimate consulting branch of medicine, with the result that professional pathologists are only to be found in connection with medical schools and public institutions, such as hospitals. In hospitals or clinical institutions provided with pathological laboratories and competent men, there is the opportunity for very thorough case-study, both by observation at the bedside and in the laboratory, and, at times, post-mortem. In all well regulated hospitals systematic records are made throughout, so that it becomes possible to correlate the observations from all points of view. In this connection, it is interesting to note that there seems to be a development in the right direction whereby ante-mortem pathology, or pathology in the living subject, is to be thoroughly studied, not by a casual, gross inspection at operation, but by a careful study in the living patient before operation, followed by a thorough laboratory examination, and, if necessary, animal experimentation. It is from thorough and detailed experimental work such as that of Crile at Cleveland and Cushing at Baltimore, and the study of pathology in the living which has been inaugurated in the Mayo laboratory by Dr. Wilson, that we are to expect the best results. Where the evidences of disease during life are masked and where opportunity has not been had for systematic and daily observation, the progress of disease can only be inferred if no other examination than that which is held post-mortem, is offered, since very frequently the pathological processes which were at one time dominant have been obscured or entirely masked by later developments. Living pathology must therefore be our greatest help, and in relation to this the importance of comparative pathology cannot be overestimated. In diseases of animals, either artificially induced or naturally acquired,

it is possible to make observations at any stage of the disease, and many complexities can be thus avoided. From such men as Theobald Smith and Veranus A. Moore human medicine and pathology will derive a very great deal, although the immediate object sought may have to do with disease processes in the lower animals only.

It is the relationship of pathology to general medicine in private practice which is hard to define. The provision of competent pathologists and the necessary specialization in the various branches of pathology are problematical and in the developmental stage. Since in pathology the posts are limited in number and still more so in income, it is probable that only the enthusiasts, or those who are unlikely to succeed in other branches of medicine, will remain permanently in the work. The great tendency amongst those who elect to specialize in other branches of medicine is to work for a greater or lesser length of time in general pathology and in the pathology of the particular line of practice which has been selected. Doubtless, this tendency will increase with time, and for consulting or private practice, it seems the easiest solution of the matter. Pathology is so complex and has so many sides that professional pathologists cannot be expected to know more of the pathology, let us say, of the nervous system, of gynecology, of diseases of the eye or of the skin, than should the specialist engaged in the practice of one of these lines of work. It is reasonable that practitioners who are to be engaged in limited fields, will see the necessity of special preparation in the pathology of that particular line and the advisability of continuing the daily practice of pathology in that special line in relation to diagnosis and treatment.

In general medicine and surgery, however, it becomes necessary for consultation between the clinician and the pathologist, since not all facts can be found out at the bedside or in the office, but require special methods, special equipment, and the service of one who is properly trained and who is engaged daily in pathological work. In this field, as in all other fields where it becomes necessary for consultation in pathology, there are a few basic principles which must be recognized. It is not the work of the laboratory man to supply *all* of the vital information which pertains to the case. He should be expected only to supplement the investigation and to afford that information which can be obtained only through his services. Medicine should not be subdivided sharply into the laboratory and clinical branches. Such an idea is vicious in its tendencies. Every laboratory man should have been thoroughly trained in clinical work and should retain his clinical instincts fully developed.

Every practitioner of medicine should have been thoroughly trained in the general principles of pathology and should know enough of technical methods to be able to collaborate intelligently with the medical man whose work lies chiefly in the laboratory. Wherever practicable, the clinician and the laboratory man should see the patient or attend the autopsy together. Each should endeavor to supplement the other's information. The interpretation of the findings and the final report given to the patient or his friends, when of sufficient importance to merit publication, should be a joint effort, so that nothing is overlooked.

There is a great tendency amongst many clinicians to furnish a piece of tissue or a quantity of fluid, blood, sputum, urine, or other material, which may or may not have been wisely selected in the first place, accompanied by practically nothing in the way of information. The laboratory man, under these circumstances, having never seen the patient and being deprived of the information which the clinician has, or should have, obtained, is expected to arrive at something which may be helpful in the solution of the case, although initially handicapped by a total lack of vital information and perhaps provided with material which is least calculated to give satisfactory results. If the laboratory and the laboratory worker are to be of practical and scientific use to the clinician, both must be thoroughly and scientifically trained, and they must have a common ground of general knowledge as also of special information concerning the case in question. Pathology must be an actual working tool in the hands of both the clinician and the laboratory man in the use of which perhaps the latter has more skill.

Satisfactory team-work is seldom done. Frequently, with scarcely any expenditure of time or energy on the part of the medical attendant, some material is sent to a laboratory, or an autopsy becomes possible. If, perchance, the findings prove of scientific importance or interest, it may now be entirely too late for careful clinical study or record. On the other hand, the word "laboratory" or "pathology" is to some a sort of fetish, and all sorts of material are gathered indiscriminately and submitted to some student or recent graduate assistant whose knowledge of laboratory technic and pathology is no more to be trusted than his ability as an operator or his skill in physical diagnosis. In this way opportunities for correlation of clinical and laboratory observation may be lost. Nor is the clinician entirely to be blamed, except for failure to discriminate, since bluff and quackery are not always wanting in those who profess to do laboratory work. If pathology and the laboratory are

to be utilized by medical men in all branches of the work, it becomes necessary either that all must be trained pathologists and laboratory technicians and engage in laboratory practice, or that certain phases of the work be recognized as distinct consulting branches, with all that the name implies. Even under the latter condition, it will always be necessary for the clinician to do thoroughly his share of the work if it is to be thorough and uniform throughout. It is difficult to say whether it is more disheartening to see a case which is thoroughly worked up from the clinical standpoint left absolutely in the realms of speculation because of failure to obtain autopsy altogether, or by reason of a so-called partial post-mortem examination, or, on the other hand, to find no available detailed clinical observation when many days have been expended in painstaking and careful laboratory and pathological investigation.

It is unfortunate that in the State of Minnesota apathy amongst the profession and repugnance on the part of the general public, render complete and careful autopsies almost an impossibility. So little is special knowledge demanded in this work, throughout the country as a whole, that even in medicolegal cases the autopsies are often carelessly made and recorded, and frequently done by those of little experience.

If we are to succeed in maintaining our place with others in the progress which medicine is making, we must all be prepared to make sacrifices for the sake of finding out the truth. Research should not be relegated to the universities and hospitals nor to the laboratories. Each one of us can find out some new truth even if he has to make his opportunities. It is by work, incessant work, without the hope of reward other than that afforded by the doing of it, that success comes, and in this *all* must share—the man in medicine and the man in pathology. Osler has epitomized the truth in regard to medicine when he says "the Master-Word is Work."

Medicine to-day should be at all times logical. Physicians must therefore be able to draw logical deductions from *all* of the facts which thoroughly trained powers of observation alone can yield. The pathologist is a physician who is engaged in acquiring facts in the laboratory or at autopsy for the purpose of verifying or supplementing those which have been gleaned by the practitioner at the bedside and elsewhere. The work of each is important and each must do his own share. The conclusions should be drawn by both in consultation, each having in his possession all the knowledge of the other in relation to the case. The physician must be a practising pathologist, and the pathologist a physician whose special field lies in the domain of the medical

work-shop or laboratory where disease may be experimentally produced and studied with accurate control of variable factors not always possible in the sick-room. In those many phases

of pathology which can never be obtained at all in the laboratory, the careful, painstaking, systematic record of wide-awake men, must form the foundation.

WEAR AND CARE OF THE NERVOUS SYSTEM*

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MINNEAPOLIS

As, in the ultimate, behind all the functioning and activities of the human organism, stands the nervous system, and upon its integrity depends the endurance, first, of the individual and, second, of his posterity, the problems that concern its conservation are of vital moment. Dr. Weir Mitchell, in evolving the so-called "rest treatment," covers only a very limited part of the full subject, and all text-book outlines familiar to the writer fail to touch, in any full way, the great essentials of the problem that must be controlled and directed by the physician if he is to accomplish his full duty to patient and community.

For the present purpose there are two aspects of the subject that will claim our attention, namely, wear and care, in their most comprehensive consideration.

First, then, for a study of the conditions and environments productive of excess strain on nervous tolerance and reserve. It is trite to say that a vulnerable nervous system in the given case means inherent defect or neuropathic taint in the ancestry; but no nervous system is entirely invulnerable. There is a limit to all endurance. And much in the complexity of our modern life puts even the most robust to a breaking test. The pace is too rapid and the tension too high.

Our average public school system is a prolific destroyer of nervous systems. The child is thrust into school at too early an age. The regular primary grades not reaching quite far enough back into infancy, the kindergarten had to be invented to rob the little human of even the first years of untrammelled free life in the open, and now vacation schools have come from the fertile brain of some one to rob childhood of all that had been left to it of the outdoor world, making the strain and restraint of the schoolroom, and its atmosphere, continuous. And even a rare holiday is only grudgingly given, lest teacher and scholars

should have opportunity to catch even a single free breath.

Some objectionable features are of course inevitable in a general school system. It must be largely inflexible, and all must keep the same pace; but much that does obtain could well be avoided. Too many things are crowded into the time. The hours are too long, and the whole atmosphere is one of stress and hurry, breeding an undercurrent of anxiety and worry that easily grows into the habit of life of the individual. Senseless amounts of outside work are imposed on the teacher, that exhaust her energies, lower her power of control, and impart a spirit of unrest to her work.

Most of the activities of the business and social world are carried on under high pressure, and it is this element of nervous tension and stress in work that wears; that is, it is more the way in which work is carried on than the amount of it, that does the harm. And the results of exhausted nervous energy in one generation mean vitiated heredity in the next, succumbing the more easily to the ordinary stress of life. And to this the various conditions of habit-excess often add their exhausting weight, with those of a sexual nature, probably the most important. Other disturbed conditions of the organism act more or less directly, immediately or reflexly, as sharp irritants on nervous tolerance, as exemplified in gastro-intestinal states, often with autotoxemia, pulmonary disease, sexual abnormalities, and eye-strain. And the puzzling problem often is, which is cause and which effect in the vicious circle which has been established. Certain it is that the nervous stress of life often puts the breaking load on the heart and the kidneys.

There are some observers, of one idea, who claim the entire field of results for a single cause, as illustrated by the following extreme example, extracted from a recent article in the Journal of

*Read before the Hennepin County Medical Society, November 4, 1905, and the Aberdeen (S. D.) District Medical Society, January 16, 1906.

the American Medical Association, by Dr. Geo. M. Gould, from the viewpoint of eye-strain as the cause of everything. As applying to all who hold dissenting opinion, he says:

"Were there a scintilla of the true investigator's spirit in their minds they would themselves put on their own noses the glasses that we say cure these patients, and test the theory. In a week they would have all the migraine needed, at least, to reduce even them to silence. I will guarantee to produce by this laudable human vivisection experiment in the skeptics and cynics, any desired degree of "neurosis," "migraine," "neurasthenia," "hysteria," "melancholia," "dementia precox," "degeneration," "nervous breakdown," "neurotic predisposition," "katatonic state," "major psychosis," "melancholia of involution," "psychical tonus, or contracture," "forme fruste," "manic depressive insanity," "confusional psychosis," "pseudo-neurasthenia," "mysophobia," "topoalgia," "neurasthenical syndrome," and the rest."

The truth of course lies in the middle ground, that any strain too great for the resisting power of the given individual, puts on the wearing load that finally tells. This tire, from whatever cause, may be only acute and transitory, amounting to little more than physiological fatigue, or long continued and gradual, the various unmistakable warnings usually going unheeded until the crash comes. This wear is not always general. It may be only in special lines, the individual becoming neurasthenic in certain directions. And there are probably comparatively few people not in some degree below normal in nervous tolerance and reserve.

The rush and high pressure in all fields of action and life in this country at the present time, puts the entire people under an atmosphere of nervous tension that must have general and far-reaching effects, with nervous wear, lowered resistance, will power, and control, that tell in the aggregate on the national character, in the present generation, and that must result, as statistics already clearly show, in an increase in the number of the unstable, the defective and the degenerate in successive generations. A very important factor is the tumult of life in large cities, and their multi-fold noises, causing a repeated bruising impact upon the nervous system that is mentally irritating and exhausting. The alternating periods of excessive activity and depression in the business world form, too, an instructive study in general national exhaustion resultant upon high-keyed over-action.

The medical profession is the conservator of the physical well-being of the people as a whole, as well as of the individual, and is responsible for the teaching of better nervous living, which

reaches in both directions, beyond the obligation to take in hand the patient undermined in nervous health, and build him up and turn him back again into the hurrying stream. We cannot follow Dr. Holmes' classical witticism, that to treat a man successfully we should begin with his great grandfather; but, by the converse, we may project results that far into the future, by instructing society how to live nervously in every situation in life. This should begin in childhood, at home and at school. No child should be put into the school room until 7 or 8 years old, but should live out of doors up to that age, making the beginning of a sound physique. In every pedagogical and normal course the proper basis of nervous conservation in living should be taught, for the benefit of both teacher and child, learning how to carry on all work in such a spirit and manner as to avoid developing the tendency to anxiety and worry, which easily become second nature, and the habitual nervous state. Here the foundation should be laid for composed, steady nervous living, learning to do one's best and let it stand at that. Especially should the teacher study the temperaments of the children and with particular reference to the naturally nervous and precocious child; for many such suffer irreparably during the earlier years of school life.

The inelasticity of public school systems makes any adaptation of work difficult, and teachers are overtaxed with a multitude of unnecessary clerical work that keeps them constantly fagged and incapable of giving their best to their real work. More attention should be given to sound physical training, which is as much a part of true education as is mere book-learning. This fact is being better appreciated of late than ever before, and there will be much of value, in the future, from the increasing attention given to out-door life, to nature, to the vacation habit, and to shorter hours of sustained effort. And touching this last point, there is a valuable article on the effect of fatigue on the occurrence of accidents, in the *Review Scientifique*, for September 24, 1904.

Much that has been said above, of general application in preventive lines, applies equally to the nervous derelict that drifts under our care. Each case is a study by itself, to be thoroughly analyzed, if properly adapted control is to have its best effect, to return the nervous bankrupt to nervous solvency, and beyond that, to teach him nervous conservation that will guard against future failures. The so-called rest treatment is but a fragment of what should be the full scheme of care and direction. The rest enjoined must not only be modified physical inaction, but, more essentially, it must be complete nervous relaxa-

tion. All tension must be let down and the patient on a basis of repose, before any actual building up is possible. He must be shown clearly, first, that his nerves are keyed up like a tense fiddle string, and then taught how to let down the tension. The usually present insomnia gives the best key to this instruction. The patient is directed to retire confident of going to sleep, thinking how limp a baby lies, a relaxed human lump. Take an inventory and see that every tense nerve is relaxed, every contracted muscle allowed to melt down, breathing with long, easy, full inspirations with the lips slightly parted. When the chest is comfortably filled let its walls simply fall in expiration, the head drop more into the pillow, and every muscle relax. Shut off thinking like the closing of a bank door. Fix the attention on the delicious sensation of drowsiness and slip away into restful sleep. Simple suggestion is important here and in much of the handling of these conditions.

The understanding of relaxation once acquired must be applied gradually to all activities, building up a state of nervous composure as opposed to that of tension and anxious wear. The patient must learn that his future nervous living must be on this basis if he is to regain and retain his dissipated nervous resources. Expenditure must be kept within receipts. He must keep inside the limit of tire clear round the circle of all his activities, doing only so much as he can without fatigue. He must not be too much alone, and yet should have the cheering companionship of but few people. Conversation must be strictly limited, and varied but simple diversion and occupation interchanging at short intervals with rest. Just when the patient is gaining best is the greatest danger of overdoing, and requires the most watchful control. Return to normal activity must come only slowly and tentatively, and especially so in the things in which the patient has shown the most fatigue, like a road that has run into ruts and requires not only that they sha-

be levelled with fresh earth, but the earth thoroughly packed and hard, lest the first heavy wheel cut the ruts to the bottom again. Every possible source of nervous wear must be sought and removed, whether of overtax or of reflex or complicating conditions of health of any sort; for you cannot fill a barrel with a leak as large as the stream that is flowing in.

That nerve tire requires nerve rest to restore nervous energy is axiomatic, and there need be no fear about rest being weakening. Rest means recuperation, and for the benefit of the future nervous health of many patients, a word of protest may not here be amiss for the excess of surgical zeal that is too often anxious to report the case up on the seventh day and up and dressed on the ninth. Change of scene is often valuable, with different climate, altitude, and air, and new surroundings that divert attention and stimulate interest.

With continued improvement, but with the occasional slumps in condition, which come at times and which the patient should be prepared for, wider latitude toward normal activity may be gradually permitted. Still continue generous periods of rest and silence, long hours in bed each night, at least nine on the average, and always an hour lying down after the midday meal. Inculcate continually also the necessity of carrying nervous repose into all activities, including physical movements, speech and thought, until that state becomes fixed, replacing the old vicious nervous habit of high-keyed activity. Gradually then let him return to the ordinary activities of life, and not in full until nervous capital and reserve have been restored to the point where he can live on the surplus. And the result has failed on the largest and most important side unless the patient has been taught the lesson of thereafter living within his means nervously, to retain the health to which he has been restored.

THE MODERN TREATMENT OF CHRONIC PURULENT OTITIS MEDIA*

BY CARL J. HOLMAN, M. D.

MANKATO, MINN.

The near relations of the tympanic and cranial cavities ought to suggest to the mind of every thoughtful physician the importance of prompt and skillful interference with the progressive destructive ravages of a suppurative process. It

is not self-limited; it does not tend toward resolution, but toward dissolution, and no trifling makeshift is pardonable.

It is thought by the laity and many members of the profession who have not seriously considered the condition, that it is trivial, and they minimize its importance and advise that it be let

*Read before the Minnesota Valley Medical Society at Mankato, December 2, 1905.

alone and that children will outgrow it. The patient's life may pay the penalty of this neglect. The disease may outgrow the patient.

Mastoid suppuration is the offspring of middle-ear inflammation, as are phlebitis, sinus thrombosis, meningitis, subdural abscess, pyemia, and abscess of the brain and, to a less degree, septic pneumonia and pleurisy.

MacEwen says that one who has a chronic purulent otitis media is liable to have, with very little warning, a most serious or even fatal illness. In every case in which intratympanic caries exists, there is always present the possibility that at some subsequent time the patient's life may thereby be placed in danger. Such diseased tissues should therefore be removed, and the best time for accomplishing this is shortly after the discovery of the fact that bone caries exists in some part of the middle-ear. That this is a wise rule to follow is shown by the fact that in the past many people have lost their lives from the sequelæ of chronic purulent otitis media, and in quite a large proportion of these cases it was not even suspected that a diseased condition of the ear was the real cause of death.

If no carious condition of the bone is present and if free drainage exists, under proper treatment the discharge will cease in a short time; but when it persists, we are sure to find, upon careful examination, that the bone is diseased in one or more regions. If the ossicles alone are involved in the process, we can then give a favorable opinion as to the cessation of the discharge under proper treatment. If the deeper structures are involved and the history is one of long-continued suppuration, then the discharge will not cease until after the so-called radical operation upon these parts has been performed.

In long-standing cases of otorrhea we often find adenoids in the vault of the pharynx, and the removal of these by operative measure often gives relief or exerts favorable influence upon the otorrhea.

What can we say as to prognosis?

If, upon examination, we find no extension of the inflammatory process to the mastoid or no intracranial involvement, we may safely say that, with proper care and treatment, no danger to life exists, but if we find intracranial involvement or mastoiditis, the prognosis is certainly grave, though perhaps not so unfavorable as we were wont to look upon it several years ago, before the ear surgeon accomplished such brilliant and successful results in the treatment of intracranial conditions.

The subjective noises, which are present in some of these purulent cases, have proved so distressing to the mental condition of patients that their lives have been in danger from attempts

at self-destruction. One point that is of interest is its bearing upon life insurance, for the companies are continually rejecting applicants who have suffered from this disease; and yet many of the cases so rejected are not rendered, by the mere fact of their once having had a purulent otitis media, less desirable risks than those who have never suffered from such disease.

The important question in such a case is, Did the pathological process really undergo healing?

If we find in such an applicant complete closure and cicatrization of a former perforation, then such an applicant should be accepted as a good risk. If, however, a perforation still exists, even though perfectly dry and small in size, then by no means is the applicant an entirely safe risk.

What shall we tell the patient who comes to us with a chronic otitis media?

If, from the examination, we believe that the bony parts are not involved, then we should institute local treatment, consisting of irrigation with 1 to 3000, or 1 to 5000, bichlorid solution, given preferably through a douche-bag and with little force; then the parts should be wiped dry, and a boric solution in alcohol instilled through the meatus. The use of powders and hydrogen peroxide is to be condemned. The powders, unless all of the drum of the ear is gone, interfere with the free flow of secretion through the perforation, and the hydrogen peroxide carries the infection farther into the outlying areas. This treatment should be systematically carried out by the physician, covering a period of three months, and if at the end of that time the discharge has not ceased, then operative measures should be instituted; and while it is generally admitted that cleaning out of the tympanic cavity through the auditory meatus is all that is necessary in a large number of cases (some authorities give good results in as high as 80 per cent, other equally competent observers get good results in only from 40 to 50 per cent of the cases), yet it is difficult to determine when this operation will be sufficient and when the mastoid should be attacked.

If the previous history of the primary involvement shows that the mastoid was involved, as is shown by pain, tenderness, and swelling over the mastoid region, then it is very probable that the mastoid was involved in the suppurative process. If at the time the examination is made there is found even slight tenderness over the mastoid antrum on deep and continuous pressure, the radical operation should be done.

What are the indications for the mastoid operation? Lewis says: "In all cases in which there is a chronic purulent discharge (odorless or non-odorless) which will not, after a thorough trial, yield to skilled treatment, this operation ought to be performed and no other objective symptom

is to be waited for." Why? If you will look upon the local condition in purulent otitis media as chronic osteomyelitis and divest the associated condition of all technical descriptions, and advise your patient accordingly, you will be doing the most for them, namely, if you have a suppurative bone cavity to deal with, it is cleaned out; why not so with a suppurative focus from the ear?

Chronic purulent otitis media is the cause of from 30 (Pitt) to 50 (Barr) per cent of the brain abscesses that occur. It is estimated in this

country that 4,000 cases of brain abscess end in death annually. About 5 per cent of all cases of meningitis and two-thirds of the cases of sinus phlebitis are of otitic origin (Pitt). In 17,028 autopsies in London, death was due in 102 cases, or 1 in 167, to an otitic lesion. In 10,707 cases with tympanic suppuration, 69 deaths occurred as the result of the aural lesion, or 1 in 55 (Koerner). In 38,017 aural patients death occurred as the result of the disease in 119, or 1 in 319 (Buckner & Randall's individual statistics combined).

THE OPERATIVE TREATMENT OF CHRONIC EMPYEMA OF THE MAXILLARY SINUS, WITH SPECIAL REFERENCE TO THE INTRANASAL METHOD*

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MINNEAPOLIS

In the following paper I wish to call to your attention a method of operating which I have found to be very satisfactory in chronic suppuration of the maxillary antrum, and which, I think, is applicable in a large proportion of the so-called chronic cases. I do not wish to be understood as advocating this method of operating in all cases of chronic empyema of the antrum, as there is a small proportion of such cases attended by bone necrosis, fistula, the presence of neoplasms, etc., where the more radical operation of Caldwell-Luc or the still more radical operation of Denker will be necessary, in order to gain the freest access to the sinus by the removal of the anterior facial wall, but these cases form a comparatively small proportion of the chronic cases of antrum involvement.

When we consider the location and the anatomical structure of the maxillary sinus, with its firm, unyielding, bony walls, with its only opening so situated in its upper portion as to make it difficult of drainage, and, moreover, this small opening exposed to sources of infection and readily occluded by congestion of the lining mucous membrane, it is not surprising that so many of these cases of acute empyema pass into a chronic condition, especially in the absence of the establishment of exceedingly free drainage and the removal of all sources of obstruction to drainage at the onset of the acute empyema.

The etiology of this class of cases influences the operative treatment only so far as the source of the diseased condition is of dental or nasal

origin, and in the treatment of these cases we must be guided by general surgical principles.

If the source of the antrum involvement is due to the presence of a diseased process in a tooth root, and the source of the infection and irritation is still present, the source of the trouble should be removed. If the cause was of intranasal origin and due to the presence of such pathological conditions as polypi, hypertrophied turbinates, deviated septum, etc., causing obstruction to drainage from the antrum, these predisposing causes should be removed. It should also be remembered that a chronic antral empyema may be due to the entrance of pus into the sinus from a purulent discharge from a frontal or ethmoidal involvement, the maxillary sinus, in these cases, acting as a receptacle for the purulent discharge, which is being diverted into it from a source of infection higher up. When, however, the diseased condition has become chronic within such a closed cavity as the maxillary sinus presents with its unyielding walls and deficient drainage, a somewhat radical operative procedure will be necessary, in order to effect a cure.

Before detailing the intranasal method of operating for the relief of a chronic empyema of the sinus, I will review briefly the different radical measures which have been resorted to for the relief of the series of distressing symptoms which attend a chronic purulent discharge from this cavity.

Kuester operated by making an opening into the antrum through the facial wall above the second bicuspid and first molar teeth, and then

*Read before the Minnesota State Medical Association, June 19-21, 1906.

enlarging sufficiently to explore and curette the cavity, in this manner gaining access to the antrum entirely through the facial wall and making no counter opening through the nasal wall. This method was ineffectual, and was later modified by Boenninghaus, who extended the incision backward to the wisdom tooth and forward to the opening of the nostril, and in some cases removed the entire anterior wall of the antrum. Later, this was still further modified by Caldwell and Luc, who made a large temporary opening in the canine fossa through which the cavity could be thoroughly explored, all abnormal conditions removed, and, if necessary, the antrum curetted. A large counter opening was then made through the inferior meatus, after the removal of the anterior end of the inferior turbinate, and the opening through the facial wall was closed, subsequent treatment and drainage being carried out through the nasal opening. The principal features of this operation were the establishment of a counter opening through the inferior meatus into the antrum, and the immediate closure of the incision through the soft parts and periosteum overlying the facial wall of the sinus. The incision was commenced above the first molar tooth and carried forward; the soft parts and periosteum being raised and a large opening made through the facial wall and the cavity cleansed.

Boenninghaus further modified this operation by incising the mucous membrane and periosteum from the second incisor to the wisdom tooth and lifting the soft tissues medially to the pyriform aperture, and externally to the zygomatic process, and above nearly to the infra-orbital foramen. An opening was then made through the bone, and as much of the facial wall was removed as was considered necessary. He then made a counter opening into the nose by removing the nasal wall from beneath the mucous membrane, making a flap of the membrane and turning it into the sinus cavity.

Denker has recently made this operation still more radical, and in order to gain better access to the anterior inner angle of the cavity, he resects the nasal wall beginning at the lower lateral edge of the skeletal opening of the nostril.

While the radical operations of Caldwell and Luc, or of Denker, gaining entrance through the anterior facial wall and making a counter opening through the nasal wall, are satisfactory in their results in so far as the termination of the diseased process is concerned, nevertheless they are somewhat severe, may leave some facial disfigurement, require a general anesthetic, and are more radical than a large proportion of these cases demand.

The intranasal method of operating as advoc-

ated by Claoué, Réthi, Freer, and others, consists in the removal of the anterior part of the inferior turbinate bone and gaining free access to the sinus by the removal of a portion of the nasal wall down to a level with the floor of the nose. The operation may be done under either local or general anesthesia, but I have found the former to be satisfactory, as, after the parts have been thoroughly shrunk with Adrenalin, the application of a ten-per-cent solution of cocaine, by means of cotton pledgets, renders the operation comparatively painless. It is of comparatively short duration, and the upright position of the patient enables the surgeon to work to better advantage, both as regards the source of illumination and the manipulation of instruments.

The indications in this method of operating are to obtain a large and unobstructed passage from the nostril into the antrum in the most dependent portion of the nasal wall, and this is accomplished by first removing the anterior half or two-thirds of the inferior turbinate at its attachment to the nasal wall and then, after gaining access to the antrum, by removing the ledge of bone down to a level with the nasal floor.

The removal of the anterior portion of the turbinate may be done either as a preliminary operation to entering the sinus, or both may be done under the same anesthesia. Personally, I have been in the habit of removing the turbinate as a preliminary operation.

The anterior turbinectomy is a very simple procedure, requires but a few minutes of time, and is best accomplished by passing the blades of the turbinate shears above and below the attachment of the bone and close to the nasal wall and cutting backward the required distance. In this way the bone is easily severed at its attachment to the nasal wall, and the loop of a nasal snare is then passed over the detached portion and drawn through.

In entering the antrum through the nasal wall, the most effective method is the use of the hand or electric trephine, which readily passes through the bony partition, and after removing several "cores" of bone, the opening may be enlarged to the desired extent by means of bone forceps or electric burr, care being taken to remove the bony ledge down to the floor of the nostril, thus preventing any obstruction to free drainage from the lower part of the antrum into the nasal passage.

By enlarging the opening sufficiently the antral cavity can be inspected and cleansed, and if necessary, curved or straight currettes used to remove any exuberant growths or diseased membrane that may be present within the antrum.

The sinus is then packed with strips of gauze, which may be left in place twenty-four to forty-

eight hours, when they are removed, and no further packing is necessary.

The duration and character of the after-treatment will depend upon each individual case. The patient can easily keep the antrum cleansed by the use of mild antiseptic solutions, passed into the cavity through a large-sized Eustachian catheter, and the patient should be kept under observation by the surgeon until all discharge has ceased.

The application of such remedies as silver nitrate, or whatever other form of medication may be indicated in each individual case, should be made at appropriate intervals, directly to the lining membrane of the cavity.

It is often surprising how quickly the distressing subjective symptoms will disappear, the general health of the patient improve, and the discharge cease after this radical operation through the lower part of the nasal wall of the antrum.

PHYSIOLOGIC CHEMISTRY

CONDUCTED BY

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As physiology, in general, underlies the modern science of pathology, so that phase of physiology which is included under the term physiologic chemistry is foundational to the study of nutrition, upon disturbances of which so many pathological processes depend and upon the maintenance of which all therapeutic problems turn.

Recognizing this important relationship and the rapid progress which medical scientists are making in this direction, the conductors of this department propose to put before the readers of THE JOURNAL-LANCET, from time to time, events and topics of interest to the medical profession in this field.

FOOD BULLETINS

The United States Department of Agriculture has been engaged for some time past in the publication of a series of bulletins designed to educate the people in the science of nutrition. The function and the uses of food, the value of certain classes of foodstuffs, and the enhancement of these by suitable preparation, have been the important subjects of these bulletins.

In the study and discussion of these questions the Government has engaged in its service a number of accomplished chemists, who have brought to their task a proficiency, in their especial field, which has enabled them to solve and to present, very usefully, the solution of many difficult problems in the chemistry of foods. These studies have served, however, to illustrate the truth that the practical dietician must be, not only a chemist, but a physiologist and, in particular, a physio-

logical chemist. Failing this, he is an uncertain guide in the application of food principles to practical nutrition. Apropos of this point, C. F. Langworthy, Ph. D., has recently written pamphlets upon "The Function and Use of Food" and "Fruit and its Uses as Food." His observations are practical; his analyses are complete; and his comparative valuations of foodstuffs are nicely estimated; but, again and again, he stumbles over physiologic facts, and draws physiologic conclusions from premises of very aged error. In some of these instances the error is so vital as to warrant, and so repetitional as to compel, notice.

For instance, we read: "Food, in yielding heat and power, serves as fuel." "Energy is developed as the food is consumed in the body." "Fruits are sources of energy rather than of tissue-forming materials."

Here is the ancient Liebig error, in the definition of foods, literally "run to seed." Heat-forming and waste-saving, which were the earlier features of that definition, have long been merged into the single food function of tissue-building.

It ought not to be necessary to say that there is no evidence of any such thing as the direct combustion of food, as fuel, in the animal body. The energy of the animal body is, in its last analysis, the energy of the foodstuffs that go into it; but they must go into it in the constructional sense. Energy-storage is the first business of the tissue cell. All foods contribute to cell-growth, or constructive metabolism. Energy output is its second business,—the direct result of functional activity. Since waste is the inevitable twin result of functional exercise, it follows

that functional rest is the only means of waste-saving; and thus the paratryptic, as well as the fuel, function of food is disproven.

As human experience so often suggests, there remains of the Liebig formula a residue of truth in the precipitation of a solution of error. We may recognize two types of material in the tissue cell: (1) a structural unit, of stable character and of slow wear and tear, to the development of which the nitrogenous foods most largely contribute; and (2) a physiological unit, of comparatively unstable quality, which responds by ready disruption and easy energy-output to any effective stimulus. Since the immediate waste products of functional activity are non-nitrogenous in character it is fair to look upon the corresponding classes of foodstuffs as most directly energy-producing.

Dr. Langworthy's publication exhibits other similar flaws, e. g., water is essentially a tissue-building material and it is entirely misleading to classify it as a non-nutrient. That "fats form fatty tissue" is a truth so partial that it carries more than its own weight of error. Fats are formed upon an exclusively proteid diet, and in the absence, from the foods, of one or of all of the characteristic fats of tissue, the latter are still metabolized.

Equally strained is the statement that "carbohydrates are transformed into fats." They are a source of fat only under conditions of forced feeding, and the physiological relation between the two is, even then, not at all clear. Of the statement that "fat in the body forms a reserve supply of fuel and may be burned by the body in place of food," we have absolutely no proof. That the body-fat is a storage-food, upon which the tissues feed in the event of starvation, is clearly true; but only as this fat becomes a tissue-builder is it available as a source of energy. There is nothing to show for it that the most readily oxidizable substances undergo oxidation in the blood.

The public and the profession are so much in need of instruction in the facts of physiologic chemistry that the conclusions, as well as the experimental methods, of the investigators who publish under the seal of the United States Government should be above and beyond criticism.

BEARD.

THE RECOGNITION OF PHYSIOLOGIC CHEMISTS

Recent news in German educational circles is prophetic of one of the main lines along which future advance in scientific medicine is to be made. The promotion of men who have done their original thinking and research in physiological chemistry to the highest honors in medicine is significant.

The great Nothnagel is dead, and the chair of medicine at Vienna, which he filled with so signal ability, has been accepted by von Noorden. Undoubtedly, the tender of this chair to von Noorden is a recognition of his great service in the study, and application to internal medicine of, physiologic chemistry. It is to be hoped that the routine work and the clinical burdens of the professorship will not deprive us, as they undoubtedly did with Nothnagel, of the advantage of further studies as valuable as those he has already produced upon metabolism and upon the chemistry of nephritis, diabetes, and lipomatosis.

It is not only at Vienna with von Noorden, at Munich with Friedrich Mueller, and at Basle with Bunge, that the physiological chemists are receiving distinction; but at Berlin, Kraus, who is the latest appointee to a chair in medicine, has done great work in physiological chemistry, and only last month Heubner was elected dean of the medical college of the University of Berlin—Heubner, who is, undoubtedly, the world's greatest pediatrician, and who has attacked the problems of the diseases of childhood along the line of physiologic chemistry. It is more than a mere coincidence that, in this deanship, Heubner succeeds the investigator Rubner, in conjunction with whom his great work in the metabolism of children and the determination of the caloric needs of infants, was done.

Since Emil Fischer has succeeded in building up the polypeptids, one might almost say peptones, the old sneer that physiologic chemistry deals simply with "messes rather than compounds," does not apply. It is a science in its infancy still, but developing so rapidly that its future mission is already proclaimed. It will be well for us not to repeat the mistake of the medical men of a generation ago, who failed for so long a time to read the message of bacteriology to modern medicine.

SEDGWICK.

INTESTINAL "CURDS"

Some time ago Uffelmann was able to show that the particles or clumps of bright or grayish white-color found in the stools of infants, and commonly designated "curds," are not, as a rule, undigested casein. The power of a word once misapplied is so great that a few lines concerning the actual chemical composition of "curds" may be of value.

Uffelmann has proved conclusively, by microscopical and chemical examination, that these curds are in reality conglomerations, at times, of fat drops (neutral fat, fatty acids, and calcium salts of the fatty acids) held together by a binding substance, the nature of which he could not

definitely determine; at other times, of conglomerations composed of crystals or of tough clumps of bacteria.

The "curds" idea rests on inaccurate chemical examination. In one of the newest texts, written by an eminent clinician, without clear chemical conceptions, Millon's test is cited in proof of the casein character of these "curds." Millon's test is not a selective test for casein, but a group reaction, common to all benzol derivatives in which one hydrogen atom has been replaced by a hydroxyl group. Even mucin of the mucus attached to the clumps, or the nucleoproteids of the intestinal secretion, will give the characteristic red when boiled with this reagent.

It is difficult for the supporters of the older "curds" idea to explain the frequent disappearance of "curds" on discontinuing a high fat and low proteid mixture and giving, in its stead, buttermilk with from 3 to 4 per cent proteids and almost no fat. That this is not entirely due to the peculiar condition of the casein in buttermilk, the writer has been able to convince himself by a series of experiments with fat-free fresh milk, prepared according to the classical buttermilk formula.*

Czerny and Keller make the following statement: "Of the food constituents, which are more or less changed by digestion, proteid bodies, up to the present time (1906), even with the aid of chemical reactions, have not been certainly identified in the stools of healthy children."

The painstaking chemical work of Herman Adler, of New York, and Langstein, of Berlin, which appears in the current volume of the *Jarbuch f. Kinderheilkunde*, confirms the earlier results of Uffelmann.

It is to be hoped that the above-mentioned studies, together with the recent vigorous writings of Heubner and Langstein on this subject, will permanently settle what Schlossman terms the curd "legend."

SEDGWICK.

PROTEINURIA

The substitution of the term *proteinuria* for that of *albuminuria* would seem to be essential to any correct statement of the physiologic, as well as the pathologic, chemistry of the urine.

A number of proteid and glucoproteid bodies are to be found in the urine, and their presence has a varied significance.

Serum albumin is, perhaps, the most common of these, and a mere trace of it is not always extra-physiological. Foreign albumins sometimes

*"The Digestion of Fats in the Infant Stomach," by Julius Parker Sedgwick, B. S., M. D., *Archives of Pediatrics*, June, 1906. "Die Fettspeicherung im Magen des Säuglings," *Ibid.*, *Jahrbuch f. Kinderheilkunde*, Berlin, July, 1906.

find their way into the blood and lymph channels and are readily eliminated by the kidney. Moreover, a very slight and perhaps temporary infraction of the epithelial plates of the glomerulus or of the endothelial plates of the glomerular capillaries will induce a leakage of native albumins. A true globulinuria may occur as the result of globulin excess in the blood, usually consequent upon active cell-destruction. A pseudoglobulinuria may be traced to the excess and disintegration of epithelial debris in the urine. The nucleo-albumins which thus appear have often led to a mistaken diagnosis of albuminuria. This liability is increased in urine that is a few hours old.

The prolonged action of the strong mineral acids is apt to lead to this disintegration of epithelial debris and to the separation of the nucleo-albumins, a fact which, as Wood and Grainger Stewart points out, puts a time limit upon the application of Heller's test.

A peptonuria may be present, indicating either dietetic excess or metabolic failure. It is too commonly forgotten that peptone remains unrevealed by the heat and acid test, by Heller's test, by the ferrocyanide and acetic acid, and other less familiar tests. The color of the urine obscures the biuret reaction for peptones. Picric acid, after a negative experience of the usual methods, is the best agent of their recognition.

The glucoproteids will answer to the Molisch reaction or, after boiling with a mineral acid, will give, with the phenylhydrazin test, the osazone crystals.

True mucin is a common constituent of the urine, not infrequently present in excess. An albuminoid, rather than a true proteid, it corresponds, nevertheless, with many proteid reactions.

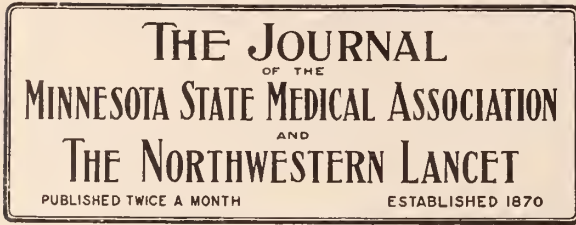
A more careful technic in clinical urinalysis is much to be desired. The routine application of many proteinuric tests is often unreliable. Corroborative means should always be employed in verification of seemingly positive results.

The prior, in place of the final, addition of acetic acid, in the heat or ferrocyanide tests, is a simple error which may put mucin in conflict with albumin as a matter of diagnosis. The same conflict may arise in the use of the Heller test of prolonged application, a mucin ring forming slowly when the latter agent is present in excess.

The potassium ferrocyanide and acetic-acid test is usually conceded to be of the greatest delicacy in the detection of albumins and globulins. These two classes of proteids are readily differentiated by solubility tests.

It goes, or should go, without saying, that proteid reactions are altogether untrustworthy in stale specimens of urine.

BEARD.



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A NEW DEPARTMENT

We call the attention of our readers to the department of Physiologic Chemistry to be conducted in THE JOURNAL-LANCET by Drs. Beard and Sedgwick.

We need not emphasize the interest and value of such material, for our readers cannot fail to know that; nor need we add a word to the subject beyond what is said in the opening paragraphs of the department, which appears on another page.

CONSTITUTIONAL AMENDMENTS

It is an old and perhaps true saying that you cannot make men good by law; but it is equally true that good officials cannot accomplish much good without good laws. In the past our boards of health, and our examining boards, have had their hands tied by the absence of good laws or the presence of bad ones, and so we shall remind our readers that they have great responsibility in voting upon such state and local constitutional laws as may come before them this fall.

One of the proposed state constitutional amendments contains, innocently, no doubt, a vicious principle. It provides that "Any person may

sell or peddle the products of the farm or garden occupied and cultivated by him without obtaining a license therefore."

This clearly means, for instance, that any man who cares for his own cows may peddle the milk from door to door without license or without inspection; and any farmer may sell diseased meat or any other unhealthful product of his own farm without let or hinderance.

The probable purpose of the amendment is to take away from villages and cities the right to impose a tax upon the farmer who wishes to sell his products in the village or city, and there is justice in the purpose; but when a people rob themselves of the police power by a constitutional amendment, they may awake to an unfortunate predicament at a time when much harm has been done and more is inevitable.

All intelligent men should read and consider carefully constitutional amendments, and should warn others against the enactment of such an one as that from which we quote.

GOVERNMENT WAR ON QUACKS

Quack doctors, fraudulent medical specialists, and criminal medical practitioners have come under the ban of the post-office department. In many of the states and large cities the quack has been pursued by state and county officials, but with few convictions. The quack, in spite of his fake methods and his dishonesty, as well as his robbing proclivities, has a vast amount of influence, and can usually evade the law, but when the United States post-office department calls a halt no influence is availing.

The reform movement of the American Medical Association toward nostrums is educational; and the exposure of quack remedies and the dishonest methods of the patent medicine men by Collier's Weekly and the Ladies' Home Journal, is forceful and effective. Added to this the attention and demands of post-office authorities make the outlook for a reform very encouraging.

When a government, state, or county official turns his inquiries to the needs of the people, and studies the actual situation, he is at once impressed with the honest efforts of the regular practitioners to maintain a high standard. For years, for centuries, the regular man in medicine has been kept in the background by his retiring manner and his conscientious attentions to his professional training. The awakening of the official world and the public to the worth of what is best in medicine has been slow and halting, but once the tide is turned the professional man will assume his long-sought position and will take his place as the advisor of the people.

Fortunately, there are a few public men who have the knowledge and the courage to uphold the regular profession. In a few of the states of the Union a governor has been found who appreciates the situation. Governor John A. Johnson, of Minnesota, has always been a friend of the physician. During his senatorial career he made one of the best and strongest speeches ever made in the senate for the side of regular medicine when efforts were made to belittle the profession. Since he has occupied the governor's chair he has endeavored to maintain a high standard in his medical appointments on the various boards of the state. His vigorous veto of the Chiropractic bill showed his high-minded purposes. Medical men appreciate such a governor and, irrespective of politics, applaud a friend who is not afraid to stand firmly for his convictions that regular medicine is safe and that quacks and frauds are the parasites who prey upon a credulous people. It is the duty of the profession to support a government, state or county official who sees the right of the qualified, licensed, and regular practitioner of medicine. Under such conditions and such powerful aids the State Board of Medical Examiners will be in a position to assist the authorities in the extermination of all forms of quackery. The increasing restrictions of the pure-food laws have already shown what can be done if the government and state are determined that frauds must cease and that the people must know what they can expect in the protection of the public health.

A REMARKABLE REQUEST

Mr. James B. Snyder, who died in St. Paul Sept. 20th, had for many years been a railroad conductor and had been treated for so many different diseases by many medical men that he requested that his body be sent to the University medical school, in order that his family might know the real cause of his death.

This is an unusual request for anyone to make. Occasionally, at rare intervals, an autopsy is asked for. The prejudice of the patient or the family is strongly in the other direction. The physician often suggests that an autopsy would clear away any doubt in his mind and would be of great satisfaction to the family, or that in the event of a searching investigation by an insurance company, an autopsy would be a wise procedure. These or any other forms of request are usually rejected on purely sentimental grounds. The people are gradually becoming accustomed to post-mortems, but many valuable lessons are lost by refusals.

In our hospitals, public and private, the situation is different. The hospital atmosphere, the

sincerity and attentiveness of the physicians and nurses, and the evident earnest desire to study and learn the cause and treatment of disease, create a different feeling in the mind of the family. They regard the request in its proper light, and know the individual and his disease are treated with sacredness and respect.

The advent of the skilled embalmer has done much to change public opinion. The dead person is handled with care, and not mutilated or left unsightly, but is improved in appearance and shows no glaring signs of investigation. If the public could realize the value of such investigations and would keep in mind the fact that the study of disease might be of benefit to the next sufferer, there would be less objection to an autopsy.

Physicians who make autopsies are not trying to cover mistakes, but are striving for enlightenment and are perfectly willing their investigations should be made openly and in the presence of others. No harm can come from a post-mortem, and much good may result. There should be more requests for autopsies. It would make the doctor more painstaking in his diagnosis of disease and less positive in his assertions. An autopsy is for mutual benefit, present and future, and if conducted in the proper spirit then will no fault arise for invidious comparisons.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The annual meeting of the Academy was held at the West Hotel in Minneapolis, on Wednesday, October 3d. There were thirty members present, and the president, Dr. Archibald MacLaren, was in the chair. Dinner was served at 7 o'clock, and at 8:30 the Academy was called to order in the parlor.

Dr. Frank Corbett was selected for active membership.

Dr. Arthur J. Gillette presented a case clinically which gave rise to considerable discussion. It was a shoulder joint in which skiagraphs revealed the complete destruction of the upper end of the humerus. The doctor believed it to be an osteosarcoma, but with some unusual features.

Dr. J. C. Stewart presented a case of tumor of the jaw in which diagnosis was a question between an osteosarcoma and actinomycosis.

Dr. A. W. Dunning presented a case of hereditary (Friederich's) ataxia with some unusual features.

These were discussed at considerable length by Drs. Little, Colvin, Jones, Tomlinson, Dennis, and Mann.

The Academy then listened to the annual report of the Secretary-Treasurer, which was accepted.

Following this came the election of officers, which resulted as follows:

President, Dr. R. O. Beard, of Minneapolis.

Vice-president, Dr. Arthur J. Gillette, of St. Paul.

Secretary-Treasurer, Dr. A. W. Dunning, of St. Paul.

Executive Committee: Drs. Carlaw and Head, of Minneapolis, and Dr. J. L. Rothrock, of St. Paul.

Reports of cases followed the election. Dr. F. C. Todd presented microscopic slides and reported cases of ophthalmia, with unusual features. Dr. H. J. O'Brien reported an operation for removal of the spleen, and presented the organ very greatly enlarged.

The Academy adjourned at 10:15.

A. W. DUNNING, M.D., Secretary-Treasurer.

MOWER COUNTY SOCIETY

The fourth annual meeting of this society was held in Austin, October 10th. The following officers were elected for the ensuing year: President, Dr. G. J. Schottler, Dexter; Vice-president, Dr. C. C. Leck, Austin; Secretary, Dr. Frederic Schultz, Waltham; Treasurer, Dr. Emma Rodgers, Austin.

The feature of the meeting was the address of the retiring president, Dr. H. F. Peirson.

CLIFFORD C. LECK, M.D., Secretary.

HENNEPIN COUNTY SOCIETY

A regular meeting of the Society was held on October 1st, Dr. F. C. Todd, the president, in the chair, and 60 others present.

A case of spasmus rotatorius was presented by Dr. J. P. Sedgwick.

Dr. J. W. Little presented a case of tumor of the inferior maxillary bone after removal. With it was shown the tumor removed with microscopic slides.

Dr. A. E. Benjamin reported as chairman of the Committee of Entertainment of the State Medical Association, the following:

Total amount received.....	\$845.80
Total expenses	607.02

Balance	\$238.78
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Dr. R. J. Hill moved the report be accepted, and the thanks of the Society be extended to the committee, and further that the balance of \$238.78 be deposited by the treasurer on certificate of deposit in some reputable bank to be

used, as suggested by the committee, as a nucleus for a building fund. Carried.

The Executive Committee reported Dr. E. J. Brown's resolution without recommendation. Dr. Brown moved its adoption, which was seconded and on vote the resolution was lost.

The Censors having reported favorably, the following named physicians were duly elected to membership:

Dr. Henry Wiseman Cook, 11th St. and Nicollet Ave. Johns Hopkins, 1902; state certificate, 1906.

N. H. Schelderup, 100 Andrus Bldg.; Rush, 1897; state certificate, 1897.

Dr. R. F. Lynch, 26 Syndicate Blk., Eclectic Medical Institute (Cincinnati, Ohio), 1882.

Dr. D. R. K. Mullin, University of Toronto, address University of Minnesota, was nominated for membership.

The regular scientific program was then in order.

Dr. S. Marx White gave a paper on the "Etiology and Pathology of Graves' Disease." Dr. J. W. Bell spoke on its diagnosis and treatment; and Dr. J. Warren Little spoke on its surgical treatment.

The subject was discussed by Dr. Haldor Sneve, of St. Paul; Dr. W. A. Jones, Dr. W. O. Fryberger, Dr. H. B. Sweetser, Dr. F. R. Woodward; Dr. A. E. Benjamin, who also presented a thyroid gland removed from a case of Graves' disease; Dr. C. H. Hunter, Dr. L. M. Crafts and Dr. O. E. Linjer took part in the discussion.

The discussion was closed by the essayists, Drs. White, Bell and Little.

The president gave an outline of the program for November 5th, as follows:

"Extra-Uterine Pregnancy," by Dr. A. E. Benjamin; and "Typhoid Fever in the Aged," by Dr. A. S. Hamilton.

O. H. BRADLEY, M. D., Secretary.

NEWS ITEMS

Dr. F. J. Bickford has moved from Milroy to Pine River.

Dr. W. B. Cranston, of Chicago, has located at Artesian, S. D.

Dr. Carl Wescheske, of New Ulm, died last month at the age of 75.

Dr. Henry M. Marks has moved from Sioux Falls, S. D., to Chicago.

Dr. J. L. Livingston has moved from Wells, Minn., to Bantry, N. D.

Dr. W. B. Grinnell, of Preston, is doing post-graduate work in Chicago.

Dr. C. J. Maercklein has moved from LeRoy, Minn., to Wyndmere, N. D.

Dr. P. H. Cremer, of Lake City, has gone to Chicago for post-graduate work.

Dr. J. A. Healy and Miss Lillie Levander, of Wheaton, were married last month.

Dr. Martin Christianson, of Hazel, S. D., has moved to Bryant, in the same state.

Drs. J. A. Du Bois and A. J. Kirghis, of Sauk Centre, have dissolved partnership.

Dr. William McManus, formerly of Ellendale, N. D., is now located in Grand Forks, N. D.

Dr. Frank E. Detling, of Duluth, is doing post-graduate work in the hospitals of New York.

At the October examinations for certificates to practice in Montana twenty candidates were present.

Dr. L. W. Meckstroth, of Wahpeton, N. D., will spend several months in Europe doing post-graduate work.

The new building of Bethesda Hospital, Crookston, is now occupied and the old building will be moved away.

A Duluth newspaper says Winnipeg is having an epidemic of typhoid fever, there being 300 cases in the hospitals.

Dr. A. M. Ridgway, of Annandale, has gone to Chicago to do post-graduate work. He was accompanied by his wife.

Dr. W. J. Mareley, of Massachusetts, has been elected by the Board of Control to take charge of the Walker Sanatorium.

Dr. F. P. Martin, who has been practicing for several months in Grand Forks, N. D., has moved to Towner, in the same state.

The Chisago-Pine Society met last month at Pine City, and had a brief program. The annual meeting will be held January 8.

Dr. William T. Collins, formerly of St. Cloud, died last month, in Mexico, at the age of 68. Dr. Collins came to Minnesota in 1854.

Dr. Glen Collie, of Orient, S. D., is doing post-graduate work in the East, and will locate elsewhere when his course is completed.

The contract has been let for the basement of the new St. Luke's Hospital of Fargo, N. D. The building will cost \$30,000 when completed.

The Upper Mississippi Medical Society met at Brainerd last month. Clinics were given at the N. P. Sanitarium and St. Joseph's Hospital.

Dr. W. S. Titus, of Mora, has opened a hospital at that place. Miss Inez Mickelson, a nurse from the hospital at Princeton, will have charge of the Mora hospital.

Dr. De Ette Brownell, of New York, has been appointed to the position in the State Hospital at Fergus Falls made vacant by the resignation of Dr. Jennie G. Purmont.

Dr. J. J. Langford and Miss Katharine Kelly, of Greene Isle, were married last month, and at once started for Europe where Dr. Langford will spend several months in study.

Efforts are being made to have the city and county help support the excellent hospital at Stillwater, which a board of women managers has conducted with great ability.

Dr. Frank J. Campbell, of Fargo, N. D., is quite seriously ill, and was unable to attend the recent meeting of the State Board of Medical Examiners, of which he is a member.

The Wisconsin State Board of Medical Examiners refused to issue a certificate to Dr. Flint of Chicago because he is an advertising doctor. The question will go to the supreme court of the state.

Dr. A. B. Anker, of the St. Paul City Hospital, has promoted one of his assistants. Dr. F. E. Murphy becomes first assistant, and Dr. D. B. Hilger takes Dr. Murphy's place as second assistant.

Dr. Franklin R. Wright, of Minneapolis, has returned from an extended trip in Europe. Dr. Wright reports that spinal anesthesia is used much more extensively in the European hospitals than in our own.

The Blue Earth County Society has planned a course of post-graduate work at home. The Society will meet weekly and take up clinical work along lines of special interest to general practitioners. An admirable plan.

The Ramsey County Medical Society has planned for a free course of public lectures on the "Causes and Prevention of Disease." Dr. F. F. Westbrook, director of the laboratories of the State Board of Health, opened the course this week.

Grand Forks' (N. D.) new hospital is to be called St. Michael's, and it will be in charge of Sister Madeline Lyons, of Fargo. Grand Forks contributes a block of land for the site and \$15,000 as a bonus. The new hospital will have sixty beds.

"River Pines" is the name of a cottage sanatorium located at Stevens' Point, Wis., under the management of Dr. Thomas H. Hay, resident medical director, and Dr. Hoyt E. Dearholt, of Milwaukee. Location, building, ground and plan seem to be ideal.

Dr. Charles O. Chilgren, who left Langford, S. D., about a year ago to spend a year in special work, died last month at Niagara Falls. He was on his way home from Germany where he had worked several months after spending four months in the University of Pennsylvania. He was 35 years of age.

Miss Edith Rommel, president of the Hennepin County Graduate Nurses' Association, gave a social for the officers and committees on Sept. 24th. The following were present: Miss C. M. Rankeillour, first vice-president; Miss Lydia Keller, second vice-president; Miss Augusta Crisler, treasurer; Miss L. Louise Christensen, secretary; Miss Elizabeth Stevens (chairman), Miss C. M. Rankeillour, Miss Geravere McCool, Miss Marion Young and Miss Emma Van Buskirk, of the Program Committee; Miss Elva Bosworth (chairman), Miss Lydia Keller and Miss Iva Cliff, of the Credential Committee; Miss Ragnhild Grenager (chairman), Miss Augusta Crisler, Miss Marion Young, Miss Ellen M. Moede, Miss Marie Anderson, Miss Alma Johnson, and Miss Esther Porter of the Clubhouse Committee; Miss Cora A. Smith (chairman), Miss Agnes Alexander, Miss Ragnhild Grenager, Miss Catherine Brown and Miss Margaret Tully, of the Sick Committee. On October 11th the monthly business meeting was held, and

after the business was transacted, Mrs. Julia Pratt read an interesting and instructive paper on "Observation of Symptoms in Children." Twenty-five nurses were present.

FOR SALE

An instrument case, 48 inches wide, 57 inches high, with 5 plate-glass shelves; double doors; golden-oak finish; practically new; cost \$65.00, for sale for \$55.00.—Dr. J. E. Moore, 704 Pillsbury Building, Minneapolis.

PRACTICE FOR SALE

A good practice in a growing village in a farming country which is thickly settled, is offered for sale by a physician who wishes to locate in a city. No other physician in place; surrounding territory is large; an exceptional opportunity. My house is modern. Price upon application. Address M. L., Care of THE JOURNAL-LANCET.

PRACTICE FOR SALE

My practice in a village of about 500, in a good farming community in the central part of Minnesota, is offered for sale at a very reasonable price. Address E., Care of THE JOURNAL-LANCET.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH OF MINNESOTA FOR THE MONTH OF AUGUST, 1906

REPORTED FROM 67 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS FOR THE MONTH OF AUGUST, 1906

STATE INSTITUTIONS.		Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Group	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Fergus Falls, Hospital for Insane.....	8	3															
Rochester, Hospital for Insane.....	3	1															
St. Peter, Hospital for Insane.....	1	1															
Anoka, Asylum.....	0	0															
Hastings, Asylum.....	0	0															
Paribault, School for Deaf.....	0	0															
Paribault, School for Blind.....	0	0															
Paribault, School for Feeble Minded.....	1	1															
Owatonna, School for Dependents.....	0	0															
Stillwater, State Prison.....	1	0															
St. Cloud, State Reformatory.....	0	0															
Red Wing, State Training School.....	1	0															
Minneapolis, Soldiers' Home.....	4	0															
Totals.....	23	7															

*No report received.

REPORTED FROM 71 CITIES HAVING A POPULATION OF 1,500 OR UPWARDS
FOR THE MONTH OF AUGUST, 1906

CITIES	Population of U. S. Census of 1900	Population of State Census of 1906	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Group	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Albert Lea.....	4,500	5,657	4	2												1		
Anoka.....	3,769	4,053	4															
Austin.....	5,474	6,489	3													1	1	
Barnesville.....	1,326	1,566	1															
Bemidji.....	2,183	3,800	1															
Blue Earth.....	2,900	2,364	3			1										1		
Brainerd.....	7,524	8,134	17												2	7		
Chsaka.....	2,165	2,085	1															
Chatfield.....	1,426	1,300	1															
Cloquet.....	3,074	6,117	1															
Crookston.....	5,359	6,794	6	2												1	1	
Detroit.....	2,060	2,149	7												1	1		
Duluth.....	52,968	64,942	76	6	2	3						1			2	32	1	
E. Grand Forks.....	2,077	2,489	1															
Ely.....	3,712	4,045	16			2									1			
Eveleth.....	2,752	5,332	10			1						1			1	9		
Faribault.....	7,868	8,279	3													7		
Fairmont.....	3,440	2,955	1															
Fergus Falls.....	6,072	6,692	2	1														
Granite Falls.....	1,214	1,340	1															
Hastings.....	3,811	3,810	1															
Hutchinson.....	2,495	2,489	2															
Jordan.....	1,270	1,311	1															
Lake City.....	2,744	2,877	1															
Litchfield.....	2,280	2,415	1	1														
Little Falls.....	5,774	5,856	11	2												1	1	
Luverne.....	2,223	2,272	2															
Le Sueur.....	1,937	1,842	1															
Madison.....	1,336	1,604	1															
Mankato.....	10,559	10,996	6													1	1	
Marshall.....	2,088	2,243	1															
Melrose.....	1,768	2,151	1															
Minneapolis.....	202,718	261,974	277	17	7	9	2	2		1			3	3	11	50	14	
Montgomery.....	979	1,281	2															
Montevideo.....	2,146	2,595	2													1		
Moorhead.....	3,730	4,794	1													1		
Morris.....	1,934	2,003	1															
New Prague.....	1,228	1,419	1															
New Ulm.....	5,403	5,720	4															
Northfield.....	3,210	3,438	1															
Ortonville.....	1,247	1,612	1															
Owatonna.....	5,561	5,651	5			1												1
Pipestone.....	2,536	2,885	1															
Red Lake Falls.....	1,885	1,797	1															
Red Wing.....	7,525	8,149	7	1		1		1					1		1		1	
Redwood Falls.....	1,661	1,806	1															
Rochester.....	6,843	7,233	8	1													3	
Rushford.....	1,100	1,133	1															
St. Charles.....	1,304	1,238	1															
St. Cloud.....	8,663	9,422	5															
St. James.....	2,607	2,320	2												1			
St. Paul.....	163,632	197,323	198	21	5	4	2	3					1	1	4	46	1	1
St. Peter.....	4,302	4,514	3															
Sauk Centre.....	2,220	2,463	1															
Shakopee.....	2,046	2,069	3															
Sleepy Eye.....	2,046	2,312	1												1			
So. St. Paul.....	2,322	3,458	3			1										1		
Stillwater.....	12,318	12,435	5	1														
Thief River Falls.....	1,819	3,502	2	1														
Tower.....	1,366	1,340	1															
Tracy.....	1,911	2,015	1															
Virginia.....	2,962	6,056	1															
Wabasha.....	2,528	2,619	1															
Warren.....	1,276	1,640	1															
Waseca.....	3,103	2,838	1															
Waterville.....	1,260	1,383	1															
West St. Paul.....	1,830	2,100	1															
Willmar.....	3,409	4,040	2		1													
Windom.....	1,944	1,884	2													1		
Winona.....	19,714	20,334	14	1												2		2
Worthington.....	2,386	2,276	1	1	1													

*No report received.

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF AUGUST, 1906

VILLAGES	Population of U. S. Census of 1906	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Ada.....	1,253	1,515	*															
Adrian.....	1,258	1,184	*															
Aitkin.....	1,719	1,896	*															
Akeley.....		1,636	2		1													
Alexandria.....	2,681	3,051	2															
Appleton.....	1,184	1,321	1															
Belle Plaine.....	1,121	1,301	1													1		
Benson.....	1,525	1,766	1	1														
Breckenridge.....	1,282	1,850	*															
Buffalo.....	1,040	1,124	*															
Caledonia.....	1,175	1,405	*															
Canby.....	1,100	1,505	2															
Cannon Falls.....	1,239	1,460	3															
Cass Lake.....	546	1,062	*															
Chisholm.....		4,231	12															
Dawson.....	962	1,056	*			1	1										3	
Delano.....	967	1,023	*															
Fosston.....	864	1,000	*															
Frazee.....	1,000	1,146	*															
Glencoe.....	1,780	1,805	1															
Glenwood.....	1,116	1,718	*															
Graceville.....	856	1,032	1															
Grand Rapids.....	1,428	2,055	5													2		
Hallock.....	805	1,014	1															
Hibbing.....	2,481	6,566	25	1				1									7	
Jackson.....	1,756	1,776	*															
Janesville.....	1,254	1,205	*															
Kasson.....	1,112	1,049	*															
Kenyon.....	1,202	1,252	*															
Lake Crystal.....	1,231	1,231	*															
Lanesboro.....	1,102	1,041	*															
Long Prairie.....	1,385	1,256	1														1	
Madelia.....	1,272	1,290	2												2			
Milaca.....	1,204	1,319	*															
Mountain Lake.....	959	1,063	*															
North Mankato.....	939	1,129	*															
North St. Paul.....	1,110	1,400	1		1													
Olivia.....	970	1,019	*															
Osakis.....	917	1,056	*															
Park Rapids.....	1,313	1,719	*															
Pelican Rapids.....	1,033	1,095	1	1														
Perham.....	1,182	1,366	*															
Pine City.....	993	1,092	*															
Plainview.....	1,038	1,140	*															
Preston.....	1,278	1,320	*															
Princeton.....	1,319	1,704	*															
Renville.....	1,075	1,229	1															
Rush City.....	987	1,041	*															
Rushford.....	1,062	1,040	1	1														
St. Louis Park.....	1,325	1,491	*															
Sandstone.....	1,189	1,589	2															
Sauk Rapids.....	1,391	1,552	*													1		
Scanlon.....		1,122	1															
South Stillwater.....	1,422	1,572	2															
Springfield.....	1,511	1,546	*															
Spring Valley.....	1,770	1,573	*															
Staples.....	1,504	2,163	*															
Two Harbors.....	3,278	4,402	*															
Wadena.....	1,520	1,868	*															
Wells.....	2,017	1,814	*															
West Minneapolis.....	2,250	2,530	2				1											
Wheaton.....	1,132	1,346	*															
White Bear Lake.....	1,288	1,724	*															
Winnebago City.....	1,816	1,553	*															
Winthrop.....	813	1,031	*															
Zumbrota.....	1,119	1,129	*															
State Institutions.....			23	7														
Other parts of State.....	1,012,328	1,085,886	285	22	4	8		3		2	1		6		4	26	18	2
Total for State.....	1,751,395	1,979,658	1099	91	21	32	6	10		3			13	4	30,206	51		4

Still births and premature births, 76 (not included in above totals).
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THE NECESSITY OF IRON TO THE PREGNANT WOMAN

It is universally conceded that the administration of iron in pregnancy is now made expedient by the development of an anemia which is usually foreign to non-pregnant subjects, and which, at one time, was an uncommon occurrence even in the case of the child-bearing.

During pregnancy, the appetite is invariably immoderately capricious and there is a disposition to gratify the palate by partaking of those foodstuffs which have been rendered fictitiously attractive to the partial, or by the complete, exclusion of the more simple and nutritious viands. While such indulgences must inevitably contribute to the development of anemia, it was not until the modern table supply, consisting almost wholly of such victuals as hot breads, highly spiced refrigerated meats, artificially colored canned goods and pastries, was made the rule with the masses as well as the classes, that anemia of pregnancy became the rule and not the exception.

In addition to the inadequate food supply which is now current, the anemia of pregnancy is rendered more widespread by the style of dress imposed by society upon women in all the walks of life. Furthermore, the blood depletion of prospective mothers of the present day is materially increased through their abandonment of outdoor exercise on account of a false sense of modesty.

In view of the fact that the health of a woman in the pregnant state, and the proper development of her unborn, is always directly dependent on a blood stream that is qualitatively and quantitatively sufficient for the exigencies of pregnancy, the administration of iron is made distinctly needful by the artificialities inseparably associated with modern life.

In selecting the form of iron to be administered to pregnant women, the utmost discrimination should be exercised. That form of the drug which is most easily assimilated and proves most acceptable to the palate is the one which should be employed. This injunction is made for the reason that the nausea which is incident to the pregnant state must not be increased, and for the further reason that constipation must not be induced by the drug. Again, the nutritive processes must be held at the proper standard, and this cannot be done in the absence of a painstaking selection of the iron to be administered.

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The Medical Times and Register,
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CHOREIFORM MANIFESTATIONS IN MIDDLE AND ADVANCED LIFE*

BY ARTHUR S. HAMILTON, M. D.

Instructor in the Pathology of the Nervous System.

MINNEAPOLIS

The term *chorea* was first employed in the fourteenth century to designate a kind of dancing mania, which, doubtless, was very similar to what is now characterized as an hysterical condition, and is sometimes still known as chorea major. Unfortunately, when, many years later, Sydenham described the disease which has since borne his name, he called it *chorea*, on account of a certain resemblance which it bore to the complicated movements of this dancing mania. Since then several other symptom groups, more or less allied, have come to be called by the same name, so that now we have Sydenham's chorea, chorea major, the chorea of pregnancy, senile chorea, hereditary chorea, post-hemiplegic chorea, electric chorea, and the so-called polymorphous chorea of Brissaud. Even of these groups some writers have made further subdivisions.

In the present paper it is my purpose to take up only one group of those forms which are seen particularly in middle and advanced life, a group certainly very different from the ordinary chorea of childhood. Herringham¹ divides chorea of adults into four classes:

- (a) Chorea like Sydenham's.
- (b) Chorea from subcortical lesions.
- (c) Hereditary chorea (Huntington's), accompanied by dementia.
- (d) Chorea differing from (a) in being

chronic, from (b) in being cortical, and from (c) in lacking the element of heredity.

It is the second two of these divisions, hereditary chorea and so-called senile chorea, which I desire to consider, and, as I can see no essential difference between them, I shall treat them as one group.

For many years it has been recognized by isolated observers that there is a form of chorea affecting chiefly adults, and characterized by an extraordinarily strong hereditary tendency, but it was not till as recently as 1872 that Dr. George Huntington,² in a sort of appendix to an article on the ordinary chorea of childhood, called attention in a few short paragraphs to this as a special form of disease, and in such a manner as to interest the profession. Though a considerable literature has since grown up there is little known about the condition which was not contained in Huntington's original report.

The disease is usually spoken of as being very rare, but in 1890 Dr. Diller³ of Pittsburgh and in 1892 Dr. Phelps⁴ of Rochester, Minnesota, pointed out that, in at least some hospitals for the insane, it is seen not infrequently. In an experience of seven years in the State Hospital at Independence, Iowa, I saw twelve cases, of which four are reported below, and among the relatives of these people I had opportunity to study several others. In a relatively short period in Minneapolis I have studied one case in the service of Dr. W. A. Jones, have casually seen four

*Read before the Minnesota State Medical Association, June 19-21, 1906.

others, and have learned of two more, so that, as with Dr. Phelps and Dr. Diller, it seems to me that the rarity of the disease is dependent as much on lack of careful observation and recording of cases as on their actual scarcity.

The disease usually first shows itself at from thirty-five to forty-five, and, in many cases at least, there is a history of the condition appearing in preceding generations. So strong is the tendency to transmission that in two families studied by Menzies⁵ there were in the first family, in six generations, fifty-two persons who lived to be more than twelve years old, and of these twenty-five, or practically 50 per cent, acquired the disease. In a second family there were forty-four individuals who lived to "grow up," and of these thirteen, or about 30 per cent, were affected. Clarke⁶ reports a family in which, in three generations, there were fourteen individuals, of whom five had chorea and eight others were insane and committed to hospitals. The disease is transmitted through the male and female sides of the house with about equal frequency, but a peculiar feature observed is that if any member escapes, his descendants almost always remain free from the trouble. Notwithstanding this frequent history of hereditary predisposition, however, the disease must have a starting-point somewhere and there must necessarily be an occasional individual observed whose parents did not suffer from the same condition, so that I cannot see the propriety of making a division of chorea simply on the basis of predisposition.

The symptoms appear very gradually, sometimes the choreiform movements coming first and sometimes the mental change, but in almost all cases one follows the other at a relatively short period, and in every well developed case both conditions are present in more or less prominence. Though beginning locally the movements early show a tendency to become generalized. They are, to a degree and for very short periods, under the patient's control, and they are always worse when he is disturbed. In advanced cases the gait has a peculiar loping or hopping quality, and in very severe cases the patient walks, if at all, only with the greatest difficulty. There is no wasting of muscles or disturbance of sensation or electrical re-actions, and only slight disturbance of the reflexes.

Usually the mental change shows itself as a gradually increasing dementia, often associated with great irritability and even distinct delusions of persecution. In the end-stages the patient is confined to bed, but death usually occurs from some intercurrent disorder.

Treatment, so far, has been of no avail.

The pathology of the disease is still undetermined: many different pathologic conditions

have been reported, but not with sufficient constancy to assure them an etiologic relationship, particularly since, as the malady is a chronic one, many of the post-mortem changes reported may be as much the result, as the cause, of the disease. That the underlying condition is a cortical and subcortical sclerosis probably expresses the present opinion on the subject as well as any short statement can.

CASE I

Male; aged 43; married; laborer.

Family History.—The father and a paternal uncle died of chorea. Otherwise the family history is of no importance in this connection.

Personal History.—The patient was healthy in boyhood and young manhood, but was always a little morose and quick-tempered. When twenty years old he was very ill with what was called "the fever," and had severe attacks of a similar disorder at twenty-five and forty. Has used beer, whiskey, and alcohol; possibly to excess.

Present Illness.—Choreiform movements have been present for more than fifteen years, and there has been severe mental disturbance for about the same length of time. The movements began in his legs and progressed slowly until they involved his whole body. In April, 1899, his mental condition had become so bad that he was committed to the state hospital for the insane. He was in good physical condition aside from the chorea, and his memory and general intelligence were fair, but he had well marked delusions of persecution and of infidelity on the part of his wife. He was irritable and frequently made complaints about insignificant matters. In 1902 he was sent to a private hospital, but grew worse there, and six months later was returned to the state hospital, at which latter time I saw him.

Physical Examination.—The patient is a rather small male, quite well developed and well nourished. Height 5 ft., 6¼ inches; weight 140 lbs. Vision, probably good. Ears, normal in appearance except that the right has a well-marked, and the left, a slight, Darwinian tubercle. Hearing, good. There is nothing very unusual in the shape of the head or face. The mucous membranes have a normally pink color. The muscles are of very fair size and quite firm. The patellar and abdominal reflexes are considerably exaggerated; no ankle clonus; cremasteric reflexes, normal. The pupils are equal, about normal in size, and re-act normally to light. He is unable to walk a crack, but there is no Romberg or Babinski. There is little or no disturbance of the pain or temperature senses.

Chest, well developed, and lungs, normal. Breathing, easy and natural. The impulse of the apex-beat cannot be seen, and, on account of

the constant twitching, it is difficult to palpate, but it seems to be in the fifth interspace and about 1.5 cm. inside the midclavicular line. Dullness begins above at about the fourth rib. The heart-sounds are regular, loud, and clear. The radial and temporal arteries are not abnormally thickened. The pulse is normal in rate, but not very full. No varicosities. Abdominal organs, apparently healthy. His bowels move once each day. No hemorrhoids. The genito-urinary organs appear to be normal. He denies venereal disease, and the penis shows no scar. Urine, negative. Blood examination: hemoglobin, 98 per cent; red corpuscles, 5,480,000 per c.mm.; white corpuscles, 7,526 per c.mm. In stained preparations the corpuscles appear normal. No differential count made. Temperature, 98°; pulse, 74; respiration, 18.

As he lies in bed at the time of the examination he keeps up an almost constant choreic movement. Occasionally the motion ceases, but it is only for an instant. The movement is most marked in the hands, a little less in the forearms, and still less in the arms. The head, and more particularly the lips and lower jaw, are in frequent motion, but here the movement, except for a slight twitching of the lips, stops at times for as much as a couple of minutes. There is an almost constant twitching of the muscles in the fore part of both legs, causing slight flexion and extension of the foot and toes. In the pectoral and abdominal muscles a frequent moderate contraction is noted. Usually when the abdominal muscles contract the scrotum contracts also. The tongue is put straight out, but he has difficulty in keeping it projected, and it is usually jerked quickly backward and the teeth closed tightly. There is slight difficulty in swallowing and articulation. Voluntary actions seem to lessen the movements. When seated he often holds to the arm of the chair, apparently to keep his hands from moving. In walking, the feet are raised higher than normal, and at times this is specially marked, producing a kind of loping gait. His heels always come down first and with more force than is natural. The movements cease when he is asleep. He usually eats heartily and very rapidly.

Mental Condition.—He seems more demented than at the time of his first admission. He knows where he is and recognizes familiar faces, but it is difficult to tell the exact extent of his knowledge as he does not care to talk on subjects which are introduced, but always wanders off to others which seem uppermost in his mind. He talks a great deal about religious matters, and has some elaborate delusions based on these. Thinks his father was at once earthly and divine, and always speaks of him as the Heavenly Father or God. This father has made a home

for him in California, and he is expecting every day to be taken there. The father will come with wings and transport him.

He recalls the exact date of his first admission, and thinks he left some time in January; has been away six months. They took him away to cure his asthma, but they did not do him any good. They could, but they would not. He has no chorea; that is only a name the doctors call it; it is asthma; more than half the world has asthma.

His expression is generally fairly pleasant, and he is quick to take note of the conversations going on about him. He also seems rather quickly to recognize the conditions and peculiarities of other patients. He gives his age correctly, and the present date also; can name the state and national capitals and the president. In other matters he seems to have a fair general knowledge, and his memory is fair. He cannot go beyond simple arithmetical problems, however. He says he cannot remember things of this kind, as it is a long time since he went to school. All the time the conversation is going on he is keeping up a series of meaningless, choreic movements. They affect particularly the head, upper extremities, and trunk. In the feet and legs there is scarcely more than a slight swaying movement. There is some defect of speech.

One month after the above date he was transferred to another state hospital. There had been no material change in his mental or physical condition.

CASE 2

Female; aged 69; married. Seen June 12, 1906, in the service of Dr. W. A. Jones.

Family History.—The father and mother died in advanced life. It is not known if they were choreic. The patient had at least one sister, who died at about 80 of chorea. She had had the trouble for years, and had frequent attacks when she would become angry and sulk for two or three days and her family could do nothing with her. She has seven living children, but none have the movements so far as known. The patient has one daughter, 28 years old and married, and one son, 27 years old and single. Both are nervous, and the son shows a frequent, involuntary wrinkling of the brows, which is probably an early manifestation of chorea.

Personal History and Present Illness.—Nothing is known as to her early life. She is thought to have had good general health, and has always worked hard. About ten years ago her son first noticed that she had peculiar movements, which have since gradually grown worse. At about the same time her mind became affected. She would become excessively angry for slight cause, tear her clothes, and throw articles about the

room. Was always suspicious and thought she was discriminated against in many ways. Her memory also grew gradually weaker. Her ordinary weight was about 130 lbs., but she has fallen off greatly in the last year.

Physical Examination.—She is a medium-sized female, fairly well developed, but poorly nourished. Right side of head is more prominent than the left; otherwise the head and face are normal. Ears, normal in shape, and hearing good. With the aid of glasses she reads fairly well. Her skin is dry and very dark, almost bronzed, in color. The patient and her son unite in saying that this discoloration of the skin has appeared of late years and has gradually grown worse. Muscles, small.

Her heart and lungs are examined with difficulty on account of her excessive movements. The lungs appear to be normal. The heart sounds are feeble, but the area is normal, and there are no murmurs. The radial and temporal arteries are soft, considering her age. The abdominal organs appear to be healthy.

The pupils are equal and normal in size and react normally for light and distance. The eyeballs have slight, jerky movements in irregular directions. At the time of the examination she is in bed with a fracture of the left thigh, and the left patellar reflex cannot be determined. The right is slightly diminished. The biceps and triceps reflexes are moderately increased. The Babinski phenomenon is uncertain on account of the choreiform manifestations, but is probably not present. She closes both eyes at the same time, normally, but cannot close either separately. Cannot raise the angles of her mouth. She protrudes her tongue straight to the front, but it is almost immediately pushed to the left, and this happens constantly when the test is carried out several times. With eyes closed she touches the tip of her nose with either forefinger, but only after her hands have gone through varied waving movements. She cannot or will not follow a finger with her eyes, but the lids follow the eyeballs normally. Her grip is a little better in the left hand than in the right, but poor in both.

Choreiform movements are very marked throughout her body and seem about equal on the two sides, except in the case of the lower extremities. They are present in the face, head, neck, arms, chest, abdomen, and legs. The muscles are all in a slightly spastic condition, and there is slight equinovalgus. The fingers and toes are generally hyperextended; at times contracted. She can scarcely control her hands sufficiently to arrange the bedclothes, and in doing so her movements become very marked. The movements are very much less in the broken limb than in the opposite, and, strange to say,

do not appear to have materially interfered with healing. There is some difficulty in articulation, and, in particular, it seems as if only after a distinct effort can she overcome a certain inertia or spasticity of the muscles. She is able to control the movements to only a limited degree.

Mental Condition.—When first seen she is lying in bed. Her eyes are half closed, and she has a sleepy expression. Her movements increase as soon as she begins to speak. She talks almost constantly during the course of the physical examination, and always about her wrongs. Tells how she was mistreated by her last caretaker, and how her leg was broken in attempting to escape from the place. Says she was being starved, and that she would have been killed if she had remained much longer. She recognizes her surroundings and remembers the faces of those whom she sees only occasionally, but she cannot tell the date or the street address of her son or daughter. Says that Grover Cleveland is the President and that McKinley preceded him. Gives the year as 1900 and something, and the month as June, but only after a long interval. Cannot tell the day of the month. She thinks her memory is good at times, and at times somewhat impaired. When questions are asked she will often say, "you just let me think," and will lie for a long time as if in deep thought, but she rarely answers the question unless it is repeated. When given, her answers are fairly relevant. The nurses describe her as very difficult to get along with, and say that she wants a great variety of things and always wants them without any delay. Even if her wants are supplied she still thinks she is being misused.

CASE 3

Male; aged 72; married; farmer.

Family History.—The paternal grandfather, a heavy drinker and a man of very ugly disposition, died at 95, probably of old age. The father, a moderate drinker and a very violent-tempered man, died at 80 years of age. He had some motor disturbance, but it is not positively known that this was chorea. The mother's family history is negative. A son of the patient is choreic.

Personal History.—The patient was strong and hearty in childhood, but had a vicious temper. In later life he drank beer and whiskey moderately. He married at 32, and has five boys and one girl. One of the boys is choreic. The others have nervous temperaments, but are not otherwise affected.

Present Illness.—The exact time at which mental and motor symptoms appeared is not known, but they certainly have been present for many years. Twenty-four years ago he received a slight sunstroke, and after this his mental change was much more rapid. On March 24,

1902, he was committed to the state hospital for the insane. Ten days previously he had threatened to kill himself and his wife, and had been prevented by physical restraint. In the language of the committing physician, "he would rave like a maniac and smash everything he could get hold of." Seven months after his admission he was discharged as improved and remained away from the institution for seven years, though by no means well during this period. At his second admission he was in good physical condition except for the choreic movements, which were general, and the presence of a blowing systolic, aortic murmur. He was oriented as to time, place, and surroundings, and showed a fair degree of intelligence in most matters, but had well-marked delusions of persecution in regard to his family. He suspected his wife of infidelity on numerous occasions. He generally behaved quite well at the hospital, but had occasional attacks when he would throw himself on the floor and scream and scratch and kick at all who came near him, very much like a spoiled child. At another time he decided that another patient, a stranger, was his son, and he treated him accordingly. On the 29th of October, 1902, I had an opportunity to give him a careful examination, of which the following is an abstract:

Physical Examination.—He is a medium-sized male, fairly well developed, but rather poorly nourished. Vision, good; slight arcus senilis. Skin, dry and everywhere hanging in loose folds. Muscles, small and flabby. Pupils, equal and rather small; they re-act equally and consentaneously to light. Patellar reflexes, equally and considerably exaggerated. No ankle clonus. No Romberg or Babinski. Lung examination, negative. Apex-beat of heart in the fifth interspace, but a little outside the midclavicular line. There is a prolonged, blowing, musical, aortic, systolic murmur. Radial arteries, very much thickened. Pulse, fairly full and strong but not quite regular. As he lies on his back in bed there is an almost constant movement of one or more parts of his body. This is particularly noticeable in the eyelids, lips, and muscles of the abdomen and shoulders. The hands and forearms are the most quiet parts of the body. Movement in the lower extremities is moderate. The movements are worse when his attention is called to them, but he can inhibit them to some degree. Articulation is but little affected. He moves about with much difficulty.

Mental Condition.—His expression is fairly intelligent, and his remarks are often witty. At times he converses readily, and then again he will say nothing to anyone. He is always sarcastic, and when he succeeds in making a joke, he is very much pleased. His conversation is somewhat fragmentary, but this is probably be-

cause his thoughts flow more quickly than he can express them. His orientation as to place is fair, as to persons not so good, and as to time very poor. He attends well to questions and probably comprehends them, though his answers are by no means relevant. He is irritable, and quarrels frequently with the patients and attendants. At times he is quite noisy.

CASE 4

Male; aged 53; married; laborer.

Family History.—The father died when forty years of age of chorea, and the mother is said to have died in a hospital for the insane. One brother and one sister died of chorea, and a living brother and sister have the same disease. Little is known of the patient's early life.

History of Present Illness.—It is impossible to learn the time when symptoms of chorea were first observed, but it is known that they were present as early as 1892. In 1898 he was living at one of the county poor-farms where he made a vicious assault on the steward. On account of this he was arrested, tried, and sentenced to serve out a period in the county jail, but he was so noisy and troublesome there that the governor was induced to pardon him, and he was sent to the state hospital for the insane. At the time he was in very fair general health, but poorly nourished. There were coarse, irregular movements in practically all parts of his body. He was fairly well oriented as to time, place, and surroundings, but recognized that his memory was impaired, and said he could not recall names and faces nearly as well as he once had done. He thought he was not shown sufficient consideration at the poor-farm, and complained of mistreatment in many ways. Subsequent to this time he remained at the hospital, and slowly deteriorated. He was irritable and peevish and complained a great deal about trivial matters. At times he would strike other patients with little or no cause. On the 21st of August, 1902, I had an opportunity to make the following examination:

Physical Examination.—Patient is a man of good frame and quite well developed, but anemic and rather poorly nourished. Sight and hearing appear to be normal; muscles, of good size and quite firm. Heart sounds and area of heart dullness are normal. Pulse, full, strong, and regular, but slightly accelerated. Radial arteries, slightly thickened. Lungs, normal. Pupils equal and re-act equally, readily and together for light. No patellar reflex or ankle clonus. The abdominal reflex cannot be observed on account of the choreic movement of the abdominal muscles. Cremasteric reflexes, normal. Sensation for touch, pain, and temperature seems to be unimpaired.

All over the body are choreic movements of the most violent character, but they are worse in the upper half of the body than in the lower. As he lies in bed his arms and legs are thrown about in every direction and his head also is constantly moving. He frequently strikes his hands and his head against the wall with considerable force and sometimes strikes his face with his hands, but does not seem to feel any pain on account of it. There is little, if any, increase in the movement of the eyeballs or twitching of the lids, but there is marked twitching of the muscles of the face and particularly of the muscles of the lower jaw. At times he has much difficulty in beginning to speak. Frequently he attempts a word several times before he succeeds in pronouncing it, but when once started he speaks fairly well. At times his voice is very high-pitched. He protrudes his tongue in a straight line, but in a very jerky way, and it is quickly retracted, though when asked to hold it out he succeeds in doing so for a little time. There is no difference in the movements of the two sides of the body, though his head is almost always held to the left. When asked to rise he assists himself by holding on to various objects. He leans far forward, rises on one foot, remains suspended on it for a moment, twists around on it, and then comes down heavily on the other heel. In walking he goes through very similar movements at each step, swaying from side to side, at times executing a hopping movement, and all of the time going through the most varied movements with his arms. He cannot go up or down stairs, and sometimes falls even when walking on a flat surface.

He eats rather rapidly, but masticates his food fairly well, and seems to have no difficulty in swallowing. He feeds himself with a spoon, but spills considerable food. Is able to drink from a cup of water without spilling very much, and buttons his clothes with considerable difficulty. Volition lessens the movements decidedly for a time, and anger greatly increases them so that occasionally, while sitting in a large solid chair, if irritated, the violence of his movements will upset the chair.

Mental Condition.—His mental condition is most unhappy and is constantly dominated by delusions of persecution. He complains particularly about "being starved," and says the nurses will give him nothing to eat, notwithstanding the fact that his appetite is enormous and he often eats as much as three of the other patients. He is equally sensitive about other matters, and often breaks out in paroxysms of rage on the slightest provocation. These come on more often at night than in the daytime, and frequently for hours at a time, during the night, he will

keep up an almost constant, loud, bellowing noise, and appear to be in a perfect frenzy. If asked the reason for these demonstrations he generally gives a most trivial cause; thus on one occasion he excused himself by saying that during the day he had been given a vest in the pocket of which was a hole, so he could not carry his tobacco in it. He takes a daily newspaper, reads it regularly, and seems to comprehend what it contains, and is fairly familiar with current events.

Subsequent to this time he grew worse, both mentally and physically. He lost in flesh, and his movements, if possible, became even more marked. Occasionally, for a little while he would seem to gain in flesh, be in better temper, and have a little more control over his body, but these periods were of short duration, and were always followed by greater retrogression. On the 25th of December, 1902, an infected area appeared in his right hand. It was opened and treated antiseptically, but he grew worse and died of septicemia at 11:30 a.m. on the 2nd of January. During his last illness his movements had been less marked than previously, and this was more noticeable in the affected hand and arm than in other parts of the body. A little before death the movements ceased almost entirely, but this was probably due to increasing weakness.

CASE 5

Female; age 36; married.

Family History.—The family history goes back to the great grandmother. Her health is not known, but she had two sons and three daughters. Both sons were married and had children, but neither they nor their children had chorea. One of the daughters had chorea, but was never married. The second daughter married and had one daughter. Both developed chorea and died of it, but their descendants cannot be further traced. The third daughter married, developed chorea, and died in giving birth to her only child, a daughter. This daughter is the mother of the patient reported. She was married at 17, and remained well until the birth of her third child, when she was twenty-four years of age. She died at 39, and is said to have had chorea in a severe form. Her first child was a boy who is now a strong and hearty man, and has four girls and one boy. All are well, and all the girls except the youngest are married and have healthy children. The second child was a girl who married at about twenty and continued well until she was twenty-four, when chorea appeared. She died at forty-four. She also had the disease in a severe form, but was not as badly affected as the mother. Her first child,

a boy, died of croup at one and one-half years of age. After that she had two daughters born and then a son. All three are living and free from the disease though well along in life. The daughters have never been married or pregnant. The third child was a son who is healthy and is the father of four sons and three daughters, all well, but not married. The fourth child was a daughter and is the present patient. There is no history of tuberculosis, cancer, excessive use of alcohol, or of any nervous or mental disorder in the family except the chorea. The family have noticed particularly that no male, or female descended through a male line, has ever been affected with the disease, and that no female descending through the female line has escaped the disease except two who have never been married or pregnant, and that no female, save one (one of the original three sisters), has ever had the disease until after marrying and bearing children. It is also an opinion in the family that they "are growing out of the disease," both as to the proportion of the whole number affected and as to the severity of the disease in individual cases, but I can find no confirmation of this so far as the severity of the disease is concerned. A brother of the patient's father had rickets when a child, is hydrocephalic, and has had epilepsy.

Personal History.—The patient is a native of the United States, and is now thirty-six years of age. As a child she was bright and healthy. She learned readily at school, and has a common-school education. Has worked hard all her life. At twenty-six years of age she married, and one year after marriage she miscarried with twins at six months. Later she had a daughter, who is now eight years old and bright and healthy. Has had some pelvic trouble for years.

Present Illness.—Four years ago her husband noticed that she had some difficulty in walking. A year later he noticed a jerking of her shoulders and body, particularly when she was tired. After this there appeared some difficulty in speech and in the movement of her arms, and some stiffness of the fingers. She gradually grew worse, but was able to do her household work until committed to the state hospital for the insane, May 9, 1902. For two or three months previously she had been somewhat forgetful, and would start to do a thing and forget what she wished to do. Her memory for remote events seemed much better than for those of recent occurrence. When admitted to the hospital she was found in fairly good physical condition, height 5 ft. 6 in., weight 125 lbs. The face was asymmetrical. The hands were cold to the touch and were distinctly cyanotic; chest examination, negative. Tendon reflexes,

all exaggerated, but pupillary reflexes were normal. Urine, negative.

There was a right-sided perineal and a bilateral cervical tear. Uterus, anteflexed. The irregular, jerky movements were widespread and almost constant during her waking hours. In general, her movements were slow, but when walking, after once getting started, she moved rather rapidly. At such times her feet were kept wide apart, and all her muscles were in a state of more or less rigid contraction. There was no movement or tremor when asleep. She was well oriented, but her memory and intellect were only fair. There was no special irritability. The matter that interested her most, and of which she talked most was getting well and going home. On June 10, 1902, I had the opportunity to make the following examination:

Physical Examination.—She is a rather large female; quite well developed, and fairly well nourished. Vision does not seem to be very good. When given a newspaper she reads only the large type, but it is difficult to tell whether this is due to poor sight or to her mental condition. When tested with a watch her hearing seems to be good, but judged by her ability to understand conversation it is decidedly impaired. Skin, fairly healthy in appearance. The muscles are small and flabby. The temporal arteries are not visible or palpable. The radial arteries are both quite leathery; pulse, regular, but not very full or strong. The apex beat of the heart is very prominent in the fourth interspace and a trifle outside the midclavicular line. The upper border of heart dullness is at the upper border of the third interspace, and the right border of heart dullness is at the right border of the sternum. The heart sounds are about normal. The chest is fairly well developed. The lungs appear to be normal. As she lies in bed the respiratory movement is regular and slow, and the excursion slight. Urine, clear, acid; sp. gr., 1030; no albumin; no sugar; a few epithelial cells and leucocytes and some granular debris. The pupils are normal in size, equal, and react normally for light and rather faintly for distance. Both eyes are quite prominent, and the balls partake to a limited degree in the choreiform movements. The patellar reflexes are much increased, but there is no ankle clonus. The Achilles jerks are very marked. When an attempt is made to test for the Romberg sign it is found that she cannot put her feet within six inches of each other, and even at that distance cannot stand without assistance. She cannot walk a crack. There is no Babinski. The biceps and triceps reflexes are increased in both arms. She cannot protrude her tongue,

and says she cannot raise the angles of her mouth. She has a good deal of trouble in touching the end of her nose with the index finger, and it is almost impossible for her to touch the lobes of her ears with her arms crossed. She sits down in a chair slowly and with considerable hesitation and rigidity, but does not grip the chair with her hands to assist her. At the time of her examination her hands are clasped in her lap in a rather awkward way. There is very little movement seen anywhere in the body, but ordinarily as she sits about the ward there is more or less slight motion of the head and body, but not of the extremities. When she talks the movement of the eyelids and the raising of the eyebrows become very marked. In smiling, her face is drawn mostly to the right. She rises from her chair without much difficulty and without catching it with her hands. She takes considerable pride in the way she walks, and explains that it would be better only that she has corns and they hurt her. Each step is very short, and with it her body sways forward, first to one side and then to the other. The body seems to be in a very rigid state when she walks, and if an attempt is made to hurry her or to turn or move her quickly in any new direction it is at once thrown into an extremely rigid condition, and she resists the movement in every way. In walking she does not look down as much as one usually does, but keeps her eyes partially closed and fixed at a point some distance in advance. She not infrequently falls and always forward. It is noticed that there is some tendency to walk on the ball of her foot with a peculiar jerky spring. When placed in bed she lies very quietly, and there is absolutely no movement except a little twitching of the eyelids and a little raising of the brows. Most of the time her eyes are fixed on the ceiling in a vacant stare.

She always speaks slowly as if she had trouble in enunciation, and in doing so her mouth is drawn to the right side. Her speech is indistinct, and the words blurred like those of a drunken man.

Mental Condition.—On superficial examination she would seem to be very much demented, but when carefully studied this is found to be, to a certain degree, incorrect. Concerning many points her memory is good, and for others it is quite fair. Thus she remembers perfectly all her husband's visits, and tells in detail when he came and how long he remained each time. She says, however, that her movements began a year or so ago last spring, which is quite incorrect. As nearly as can be determined she has no delusions re-

garding her husband. He writes to her regularly twice a week. She is always very glad to receive the letter, opens it very awkwardly and with much fumbling, and reads it very slowly. She also writes short letters to her husband. As she writes there is a well marked tremor in the hand she is using, but not in other parts of the body. Each character is formed very slowly and with much labor. She eats very rapidly, takes large quantities of food, and, at times, chokes. The attendants think this is due more to her rapid eating and insufficient chewing than to any actual incapacity to swallow. There is no loss of control over the sphincters, and she is not absolutely filthy, but is very untidy.

Subsequent to this time she failed both mentally and physically, and when I last saw her, in 1904, she was very much demented and in very bad physical condition. She articulated very indistinctly and could scarcely be understood. She always walked in a stiff, strained manner, and often fell even in the ward. Had an excellent appetite and ate enormous quantities of food. Imagined she was improving, and was quite able to go home. In April, 1906, she was reported as still living, but much worse.

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DISCUSSION

DR. W. A. JONES (Minneapolis): I am sorry that there is not sufficient time for Dr. Hamilton to read his entire paper as it contains a great deal of valuable information. I happen to know through some Philadelphia friends, that the essayist studied his cases from a pathological standpoint after the etiological and clinical features had been carefully verified, and he is therefore qualified to express an authoritative opinion.

The large number of cases recorded by him is unusual in the experience of one man, and it serves to emphasize the fact that many forms of supposedly rare forms of disease may be recognized by the careful observer. It is also evident that hereditary or Huntington's chorea is not an uncommon type of disease.

A study of chronic cases in institutions or the secluded individuals in homes, as well as the walking cases on the street, will often bring to light the familiar types of primary, developmental, or hereditary diseases. Closer attention should be given to family histories, in order that the peculiar and degenerative manifestations may be separated into their respective classes.

I have had five or six cases of hereditary chorea under observation, from the beginning of the choreiform movements to the final terminal dementia, and I am still waiting for specific pathological findings.

DR. H. A. TOMLINSON (St. Peter): Like Dr. Hamilton, I, too, have seen a number of cases of Huntington's chorea, and some years ago I collected a

number of these cases with the intent to study their pathology. In one of these cases the heredity was traced through three generations, and both brothers and sisters were affected in each generation.

The object of my investigation was to determine what I believed to be the relation between hereditary chorea and disseminated sclerosis; and so far as this investigation has gone it would tend to bear out the assumption, the main difference being that in disseminated sclerosis the process is more rapid and complete and the motor involvement is more paretic than spastic. In both there is a terminal dementia, but in the chorea there is also a progressive failure in inhibition and co-ordination, which becomes more marked as the dementia increases. In chorea the movements become more extreme and violent in proportion to the loss of control.

It was at one time believed that hereditary chorea was a spinal degenerative disease, and the mental failure was not considered, because those studying the disease were interested only in the motor manifestations. There are some cases of chorea which are hard to distinguish from disseminated sclerosis, and I have seen cases of sclerosis that were, in their manifestations, very difficult to distinguish from chorea. It was my inability to get material for my investigation of the pathology of sclerosis that stopped the comparative study to which I referred, but I believe that when Dr. Hamilton has completed

the study of the morbid histology in his cases, he will find that he has anticipated the result at which I was aiming.

DR. ARTHUR S. HAMILTON (Essayist): I think I have nothing further to add except in regard to the pathology of the disease. I had a case in which I had opportunity to make a post-mortem examination, but as the patient had had the disease from thirty to forty years, it is possible in that time, for enormous changes to have taken place. In two cases there was marked atrophy of the brain, and in one case there was the most marked atrophy that I ever saw. There was considerable dementia, but not more so than in other cases. In other cases the degree of atrophy was slight, but not more than we would expect from the age of the patient.

I have one case rather interesting, and I have never seen anything like it. It was a man who had chorea a great many years, an old man who was supposed to have had it ever since he was young. In the cutting of the spinal cord it is possible to take an entire section in which there is one horn in which there is not a single cell left. In some sections you will find two or three very atrophic cells. The other horn is very much atrophied, but not so much so as the first.

So far as I have gone I have not found any very marked degeneration in the tracts of the cord. If I find any I shall be glad to report them.

GRAVE ERRORS IN THE DIAGNOSIS OF TYPHOID FEVER*

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MINNEAPOLIS

Typhoid fever is a disease so prevalent and well understood that the ordinary case is readily recognized and the diagnosis usually not in doubt after the first week or ten days. This is true of "straight" cases that can be seen under favorable conditions (in hospital or under the observation of a trained nurse), but is not true of atypical cases or of such patients as can be seen only at irregular intervals. Of such cases the writer has often been in doubt for some time and has been unwilling to make a diagnosis until unmistakable earmarks appeared. There are a number of other conditions, not typhoid, which may closely simulate and be mistaken for these atypical cases and in which great harm is done unless the error is early recognized. It is with such cases this paper deals.

Harm is done in one of two ways: (1) by treating expectantly for typhoid a condition that demands surgical interference until the resulting weakness and complications forbid proper surgical relief, and (2) by treating for four or five weeks as typhoid a condition which demands,

instead of confinement and starvation, full diet and tonic treatment.

Acute intestinal intoxication is most frequently mistaken for typhoid fever. If the patient is one of weak muscle-tone with an irritable nervous system and is suffering from chronic constipation, the low fever, slow pulse, coated tongue, sluggish bowels, tender abdomen, and dull headache closely simulate typhoid. If such a patient be given a diet of milk every four hours, cold sponging for the fever, and enemata and mild antiseptics for the bowels, this typhoid state may continue for a long time. If no greater harm is done, the error costs the patient much in time, strength, and anxiety; but if the patient be naturally weak or the host of some latent tubercular lesion, serious harm may be done by such treatment. In no other instance is the use of a brisk calomel purge, followed by starvation for a day or two with plenty of water by mouth and colon, so desirable and satisfactory in its results. This early initial cleansing of the alimentary canal will, in many instances, decide the diagnosis without waiting for a Widal test, leucopenia, or rose-spots. If, on the other

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hand, the case be typhoid some of us think this early evacuation at the start equally desirable.

Several forms of tuberculosis may simulate typhoid, and unless promptly recognized the delay may turn the scales against the patient. Tuberculous peritonitis, which comes on slowly with a continuous low fever, tympanitis, abdominal tenderness, without exudate or glandular enlargement, is easily thus mistaken. The following case will serve as an illustration:

Mrs. K., a young married woman, came to the office late in the afternoon. The temperature was 102°, tongue coated, face flushed, pulse rather slow. She complained of a dull headache and general malaise, and had felt, during the last few days, some tenderness in the abdomen. After being sent to bed these symptoms continued, but her spare flesh and mental alertness suggested the likelihood of a more chronic trouble. I am satisfied that had this girl been kept on typhoid treatment for four or five weeks her chance of recovery would have been very small. By not being willing to rest in a diagnosis of typhoid without positive proofs, although the clinical picture would strongly have warranted such a conclusion, the true condition was at once found. She was put upon forced feedings and given all the liberties conducive to improving metabolism. Some weeks later an abdominal incision was made and showed a very red, injected, glistening peritoneum studded with very small tubercles and without fluid. She has apparently made a complete recovery, and for two years been in better health than ever before.

In children and young adults the writer has seen a number of cases in which a condition, simulating typhoid for several weeks, has, under the most careful management, terminated in tuberculous meningitis. In every case the positive findings for typhoid were incomplete, but no other diagnosis could well be made at the time. Such a case was a young boy under the personal care of Dr. J. W. Bell, who had seemingly run a course of mild typhoid. The first inkling of any new development was the acute hearing of the patient one morning. The Widal test had given only a partial reaction. A leucocyte count made at this time gave about 15,000. Meningitis was now suspected, and it proved fatal.

In these cases the question whether or no the beginning illness is typhoid is usually left open. In most instances I believe the case is tuberculous from the start, and demands the most active supportive treatment.

Acute miliary tuberculosis is often indistinguishable from typhoid in its clinical picture. This mistake, happily, does not influence the outcome so much, but it prevents the physician from

giving a correct prognosis, and preparing the family early for the fatal termination. The Widal reaction and blood count are of value.

The more chronic forms of septic endocarditis are usually diagnosed during the first few weeks as typhoid. A number of such cases have come under observation and have given no Widal reaction, leucopenia, or rose-spots. The absence of these findings, after the first ten days, should direct attention to the heart and blood stream in such a case, especially if a valvular lesion, old or new, is present. It was my good fortune some years ago to follow such a case to recovery. After a supposed run of typhoid, which continued so long as to make that diagnosis unlikely, the patient was explored for some deep-seated pus pocket without any such focus being found. The clinical picture was at this time an irregular fever with chills, sweats, and exhaustion. Finally a suspected murmur at the apex became more distinct, and settled the diagnosis of ulcerative endocarditis. The man recovered after a long fight. In this, as in every similar case, a great gain for effectual treatment is made as soon as typhoid with its possible threatening complications can be ignored.

Some pyemias and deep-seated inflammations simulate typhoid. Butler, in his "Diagnostics," speaking of a right salpingitis, says: "I have known one case in which the occurrence of continued fever and the typhoid status with right iliac tenderness in this disease, led to a diagnosis of typhoid fever, but a vaginal examination, not previously made, settled the question at once by disclosing a fixed uterus and a tender mass in the right pelvis." Several physicians with whom I have spoken admit such errors do occur.

Some cases of appendicitis, after the initial symptoms have passed, are mistaken for typhoid and irreparable harm done by pus burrowing while the attendant is expectantly waiting for the fever to subside. Such cases are too common to need illustration. A right-sided pyelitis or tuberculous kidney may at some stage appear like typhoid, as was the case in a medical student operated upon some years ago for me by Dr. J. E. Moore.

The following case will illustrate another class of cases in which we should be particularly careful not to institute typhoid treatment unless the diagnosis so warrants:

Mrs. W. had been this spring at the hospital three weeks for her first confinement, which was instrumental and caused a tear just into the rectum. She had no temperature while at the hospital, and the perineum healed perfectly. After being home and well just twelve days, without any known exposure or cause, headache, malaise, and coated tongue set in. A most

searching examination revealed nothing wrong with the breasts, tonsils, or chest, and there was no soreness in the abdomen or any tenderness or discharge from either rectum or vagina. The temperature ran a perfect typhoid course, reaching 103° or more afternoons and about 101° forenoons. The Widal test was negative, and the leucocytes numbered 10,000. Following the initial calomel purge and flushings, every effort was bent towards discovering the cause of the temperature, and the patient was in the meantime given ample diet so that lactation might not be permanently abandoned. Typhoid was evidently not present, for the fever gradually subsided in eleven or twelve days.

A case seen only last week will, in conclusion, illustrate the danger of resting satisfied on the diagnosis of typhoid fever in these doubtful cases until the true conditions have become so obscured as to make accurate findings impossible:

Mr. S., aged 25, single, bookkeeper, had always been fairly healthy. For some time this spring he had not been as well as usual, although attending to his work. He was taken ill one night suddenly with chills, fever, vomiting, intense headache and marked nervous symptoms. He had been for two weeks under the observation of two competent men, who, though puzzled as to the exact nature of the case, believed it was and would in due time prove to be typhoid fever. No alarm was therefore felt although the patient was evidently very ill from the start. The hope entertained, that the illness would prove typhoid, gave them a false sense of security and evidently stopped daily search for some other explanation

for the condition. When consultation was finally called, the abdomen was markedly distended with gas, the tongue was dry and coated, there was stupor with low muttering delirium and the heart was very rapid. He was constantly vomiting a dark fluid. A Widal test reported early in the disease was negative. At this time a leucocytosis of 15,000 was present. Nothing else was evident on physical examination except a blowing systolic murmur at the apex, for the abdomen was so distended as to exclude any examination of its viscera. Trustworthy information as to whether the bowels had freely moved since the illness began except by injections, could not be had. The keen facial expression, the mental alertness when aroused, absence of rose-spots, the negative Widal, leucocytosis, all pointed away from typhoid. Large repeated doses of castor oil and high colon flushings failed to move the bowels or displace the gas. It seemed quite impossible to differentiate at this stage between a mechanical obstruction of the bowels with intoxication, appendicitis, a perforating gastric or duodenal ulcer, abdominal tuberculosis, or some general septic infection. The post-mortem was only partial, but proved absence of typhoid, although it left the cause of the illness still in doubt.

The above are common conditions and seem almost too trite to bring before such a meeting as this, but the fact that these mistakes, nevertheless, constantly occur, is all the more reason why we should bear them in mind and thereby avoid them.

MANAGEMENT OF PREGNANCY COMPLICATED BY VALVULAR DISEASE*

By LIDA OSBORN, M. D.,

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Pregnancy, though a physiological condition, produces an increase in the size and vascularity of the pelvic organs. This increase demands a larger quantity of blood and an increase in the work of the heart. To meet this demand for more work, most writers believe the heart, especially the left ventricle, becomes hypertrophied.

This constantly increasing demand for a greater quantity of blood and the gradually increasing mechanical obstruction, often calls into use all of the reserve force of the heart. Then it is

unable to compensate for any increase in arterial and venous tension, and is unable to meet the demands of the rapid changes in vascular tension during labor. This may account for the frequency of valvular disease in pregnancy. Many of the lesions have existed before and others develop during pregnancy. Demelin reports that heart lesions are found in 1.23 per cent of pregnant women; Fellner, in 2.4 per cent. In William's 3,000 cases he reports from 1 to 2 per cent. In only one case did alarming symptoms develop. In Fellner's 94 cases of valvular disease only one-seventh showed symptoms.

Mitral stenosis produces the most serious re-

*Read before the Minnesota Valley Medical Society at Mankato, December 2, 1905.

sults, because of its tendency to cause dilatation of the heart, and to produce pulmonary symptoms. Dr. Edward Davis reports the mortality in these cases as over 50 per cent. In aortic disease he reports it as 23 per cent; in mitral insufficiency, 13 per cent. Others place the mortality as less. Osler thinks that these figures must have been taken from a series of unusually severe cases. Muller also believes that they are too high. He bases his judgment upon a series of 4,000 cases, as reported by Wessner of Berlin.

We must bear in mind the fact that some report only the deaths which occur during pregnancy and labor or within a few days following. Others include those cases which die perhaps a number of months later as the result of the effect of pregnancy and labor upon the heart. The majority of deaths occur after labor is passed. In some cases there are no immediate bad results, but the strain upon the heart is so great that a rapid degeneration of the heart muscle follows (Schlayer).

The following is quoted from Nicholson: "In making a prognosis in these cases it is well to remember the statement of Von Guerard, founded on the work of Martin's clinic. This observer reports that heart lesions formed the most unlucky complication of pregnancy, as seen in that service; and he even states that the material results are worse than those seen in cases of eclampsia and placenta previa."

The prognosis, as a rule, is good so long as compensation is maintained. Zweifel has reported two cases in which collapse and death occurred where the patients had been unaware of any trouble. When compensation is lost nature often produces premature labor with good results. This occurs, according to Williams, in about 20 per cent of the cases. Hirst says: "The longer the lesion has existed and the more incomplete the compensation the greater the liability to premature labor."

Where this has not occurred and therapy gives no relief the prognosis is bad; for, even if labor is induced and some of the symptoms are relieved, death usually occurs within a few months.

Where there has been serious trouble, the child may be imperfectly developed because of defective circulation.

Many conflicting opinions have been expressed as to whether a woman with valvular lesions should marry. Schlayer and Berry Hart would advise almost unconditionally against their marriage. A large number agree that where compensation has never been broken and the social

condition is such that she may have good care throughout pregnancy, marriage may be permitted, except in mitral stenosis.

The treatment of these cases is much the same as that of other cases of heart trouble, where hard work has to be performed. Treatment is symptomatic. Where compensation is good there should be a good hygienic mode of life. Avoid nervous disturbances and undue exposure to cold. The bowels and kidneys must be kept active. Where compensation is fair, the patients should be kept under close observation throughout pregnancy. As soon as symptoms appear, the patient should be put at rest. Where this does not give the desired relief some heart tonic, as digitalis or strophanthus, should be given. If these are not effective, blood-letting may be tried as it occasionally gives relief from dyspnea and distress. Inhalations of oxygen may be added and subcutaneous injections of ether and caffeine. If these do not relieve and life is threatened by edema of the lungs, emphysema, or visceral congestion, labor should be induced. This should never be done when the patient is in extremis. There is much difference of opinion in regard to the value of this procedure. MacDonald is one who believes it will never give relief when nature has not brought it about. The only exception he makes is in cases of extreme hydramnion. On the other hand, we find those who with von Guerard advise the production of labor in every severe case of failing compensation. Winchel regards the results as uncertain, but would not advise against it. Lusk advises it in every case of mitral stenosis. The bad results from sepsis following induced labor probably strongly influenced the older writers against it. Because of this it was often delayed until too late to give the best results.

When failing compensation occurs in the earlier months of pregnancy, it is readily seen that emptying the uterus will not give much relief. There has not been much increase in the amount of work for the heart. In the later months when, as a rule, the severe symptoms appear, the increase in the size of the uterus is marked and mechanical obstruction is increasing. In these cases we can expect more relief from the procedure.

When labor begins, allow it to proceed normally until dilatation is sufficient to apply forceps. If the symptoms are urgent, artificial dilatation may be performed or Dürhssen's incisions may be made if necessary. The patient should be anesthetised at the end of the first stage of labor, and delivery completed. This will re-

lieve her of all unnecessary exertion. The delivery should be slow, in order to prevent the too sudden change of intra-abdominal pressure and collapse. As an aid in preventing this sudden change of pressure a sand pillow may be placed on the abdomen or an abdominal bandage used to be tightened as delivery proceeds. During this time the heart should be stimulated, if need be, by inhalations of amylnitrite or by hypodermic injections of ether, nitroglycerin, or other stimulant. In case of asystole at the end of the second stage, the removal of 16 to 20 ounces of blood may relieve.

Webster advises the separation of the placenta by the hand to produce bleeding in order to relieve the system of the excess of blood.

Ergot should not be used, for it contracts the arterioles increasing the work of the heart. It

also prevents bleeding from the uterus.

For an anesthetic, chloroform is advised by most of the writers, to the degree of analgesia. With the improved method of administering ether and its good effects upon the heart it is preferable.

If the patient dies suddenly during labor and the child is viable, the accouchement forcé should be used, or, if need be, Cæsarian section performed.

After labor a long period of rest is required in order that the heart may regain, as nearly as possible, its former condition, and that subinvolution, which, in these cases, takes place slowly, may be complete.

Where the condition is at all serious the mother should not be allowed to nurse her child.

CLINICAL MICROSCOPY

CONDUCTED BY GEORGE DOUGLAS HEAD, M. D.

BLOOD IN SCARLATINA

Tileston & Locke (*Journal of Infectious Diseases*, Vol. II, 1905) have studied the blood in 34 cases of scarlet fever. Examinations were begun on the second or third day and continued until death.

In the beginning the percentage of hemoglobin was about normal with a tendency to drop as the disease advanced. In some of the mild cases no diminution in hemoglobin could be made out, while in others a loss of from 5 to 20 per cent was noted. The severe cases showed a loss of from 10 to 25 per cent.

At the onset the red-blood cell count was invariably normal, i. e., from 4,300,000 to 5,600,000. In the very mild cases no reduction in the number of reds was noted; in cases of moderate severity a fall of 100,000 to 700,000 was encountered, while in the very severe cases the red count would drop more rapidly, but never exceeded 700,000 to the ccm.

The degree of leucocytosis varied with the age and severity of the case. During the first two days there is a rise to 16,000 or 17,000; then on the third day a more sudden rise to the maximum count of 23,000. On the fourth and fifth day a slight fall occurs, to be followed by a later rise to 21,400 on the eleventh day and coming back to normal in the sixth or seventh week. The differential count in the beginning

showed a slight increase of mononuclears, to be followed later by a still greater increase of these cells. Eosinophiles were increased on the fourth or fifth day to 5 or 6 per cent. The effect of complications upon the blood of scarlet fever was negative.

Measles, local abscesses, endocarditis, otitis media serosa, and typhoid fever produce no alterations in the blood of scarlet fever patients. Cervical adenitis produced a marked increase in the white count and the neutrophiles.

The leucocytosis was less marked in the mild cases as compared with the severe ones.

LEUCOCYTES IN BRONCHOPNEUMONIA AND LOBAR PNEUMONIA IN CHILDREN

There has been altogether too little attention paid by clinicians to the value of the leucocyte count in the diagnosis of diseases of children. In our experience the leucocyte count in sick children, from two years upward, is as fixed and governed by the same laws as that in the adult. The widespread impression in the profession that the leucocyte count in children is too variable a quantity to be of any value from a diagnostic standpoint will not be found true by any one who will take the pains to count the leucocytes in such cases.

Heiman, in the *Archives of Pediatrics*, October, 1905, adds to our knowledge of the leucocyte count in children sick with bronchopneumonia

and lobar pneumonia. In 19 cases of bronchopneumonia occurring in children from 10 months to 5½ years there was always a leucocytosis ranging between 12,600, the lowest, and 73,000, the highest. Twelve of the cases recovered. In these all of the counts in the early days of the disease were high, while toward the end the count was usually low. In the fatal cases the early counts were also high, while in four of them as death drew near the count became markedly diminished.

In the 24 cases of lobar pneumonia in children studied by Heiman the highest count was 55,800, the lowest 20,200—a rather higher leucocytosis than in lobar pneumonia in adults.

There were two fatal cases in both of which a leucocytosis was present at the beginning, while prior to death a marked drop in the count appeared.

The writer also studied seven cases of empyema, in all of which there was a marked leucocytosis at the onset.

Heiman concludes that as a rule in bronchopneumonia where the leucocyte count fails to drop when pulmonary signs disappear, either a complication or a fatal termination is to be expected. In lobar pneumonia a sharp rise in the count near the close of the disease usually indicates the presence of some complication, generally a supervening empyema.

IODOPHILIA

By iodophilia is meant a brown color which the granules of polymorphonuclear leucocytes take on when brought in contact with an iodine-containing solution. In all probability the cellular glycogen contained in the leucocytes acted upon by the iodine produces the reaction.

The technic of the procedure as devised by Ehrlich, in 1883, is exceedingly simple and can be made by any one having a microscope and the proper solution. The reagent is composed of one part iodine, 5 parts potassium iodide, 100 parts distilled water, and 50 parts gum arabic. This mixture forms a thick syrupy liquid. Blood smears are made on cover-glasses in the usual way and allowed to dry in the air, a drop of the reagent is then placed upon a slide, and the cover-glass, with the smeared side down, is mounted in the drop in such a way that the solution comes in contact in a fairly thick layer with all parts of the blood smear. After five minutes the preparation is examined with the oil-immersion lens. If the reaction is positive a brown or mahogany color appears in the granules of the neutrophiles. Not all these cells show the reaction. In some cases only a few cells; in others the majority of the polymorphonuclears possess granules so colored. Occasionally the

mononuclear cells also exhibit the reaction.

An important contribution to the subject of iodophilia has been made within the last year by J. C. DaCosta, Jr. (Proceedings of Philadelphia Pathological Society, December 28, 1905.)

DaCosta's conclusions in substance are as follows:

1. Intracellular iodophilia indicates a form of leucocyte degeneration of toxic origin, due presumably to an abnormal affinity of the cellglycogen for iodine. Extra-cellular iodophilia has no definite pathological significance.

2. The toxic factor of the reaction may be absolute and frankly demonstrable, as in pyogenic septicemia and in pneumonia, or it may be indefinite and marked, as in pernicious anemia and cachectic states.

3. The reaction affects only the cytoplasm of the leucocytes. In 98 per cent of the cases the neutrophiles in 20 per cent of the lymphocytes and myelocytes are affected. Diffuse and diffusely granular brown stainings are the prevailing microchemical changes.

4. The number of iodine-staining cells corresponds roughly to the color intensity of the reaction, fifty per cent or higher of iodophilia being generally found in a decided, and 25 per cent in a feeble, reaction.

5. Iodophilia has no direct relation to leucocytosis, to anemia, or pyrexia.

6. From a clinical point of view iodophilia is often helpful, though under no circumstances a diagnostic sign.

A positive reaction in a person obviously ill means that the systemic effect of the illness is vigorously exerted in so far as its harmfulness to the patient is concerned. In this connection the sign is useful in the study of such cases as enteric fever, pneumonia, diphtheria, general sepsis, and many of the severe cachexias.

When associated with leucopenia, iodophilia is symptomatic of overwhelming prostration of the individual.

Iodophilia plus leucocytosis indicates simply an intense systemic counteraction.

DaCosta found the test of value in differentiating gonorrhoeal arthritis and osteomyelitis from rheumatic fever, pure tuberculosis from tuberculosis with secondary pyogenic invasion, ovarian abscess from ovarian cyst, amyloid liver from fatty cirrhotic liver.

In purulent infections, unless the abscess is well walled off, the reaction is always present. In non-purulent lesions the reaction is absent unless there is some other source of toxemia.

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NOVEMBER 15, 1906

THE MAYOR'S PROMISE

The Hon. James C. Haynes, the newly elected mayor of Minneapolis, has promised the Executive Committee of the Hennepin County Medical Society that he will appoint as city physician a man selected by that body. His only qualification was that a number of names belonging to both political parties should be presented to him for consideration.

This, of course, throws the selection of a city physician again into politics, and it is not a good policy. Whatever fault individual members of the medical profession may find with the City Hospital's management, it should be understood that the selection of a city physician should be made on a non-partisan basis, and that the City Hospital should be entirely and forever divorced from politics. Minneapolis is still behind St. Paul in its hospital management. The control of the St. Paul City Hospital has for years been under a special board, composed of men who have no political axes to grind and who believe in a well tried man, Dr. Ancker, who has been encouraged to make the institution his life-work. For years he has studied hospital construction and management, and the city has appreciated his efforts by its loyal and generous sup-

port. The result is a great hospital. Minneapolis needs the same method and a keener appreciation of the financial needs for equipment and maintenance.

If Mr. Haynes will follow a policy of non-partisanship toward the City Hospital in Minneapolis he will add glory to himself and his city.

THE PASSING OF QUARANTINE FOR SMALLPOX

The Minnesota State Board of Health at its regular meeting, held October 9, 1906, took action as follows:

It having been established that smallpox will not spread in a well vaccinated community, and believing that all attempts to restrain smallpox in a community not protected by vaccination, by means of quarantine, will fail; that quarantine in a well vaccinated community is unnecessary; that attempts to control the spread of smallpox by means of quarantine is unscientific, irrational, expensive, and misleading; that in laying down strict rules for the quarantine of smallpox, sanitary authorities are favoring unscientific and illogical methods for its control, and are conveying false ideas as to the safety of the public, the Minnesota State Board of Health advises that after January 1, 1908, further attempts to control smallpox in Minnesota by means of quarantine shall be abandoned.

The above resolution speaks for itself and is an advanced innovation toward the abandonment of quarantine measures for smallpox.

The Board adopted the resolution after careful deliberation, and is fully aware of the opposition with which it may be met. Of all the communicable diseases known, there are none which can be so thoroughly and absolutely controlled as smallpox. The means of controlling it are simple, namely, vaccination. The success of this means is too well known to allow of any dispute between careful thinkers. To the Minnesota State Board of Health it seems worse than useless to continue to encourage the public in the belief that quarantine is an essential part in the control of smallpox.

The resolution is published at this time to invite discussion and to show the unbeliever in vaccination that the smallpox patient may go forth unrestrained. An epidemic can readily be stamped out by early vaccination, and those who are not protected or who do not believe in the theory of vaccination will bear the burden of an epidemic, if one shall occur.

To the public who rely upon the quarantine of smallpox patients for protection the resolution may seem harsh. The only remedy is vaccination. The time will come when compulsory vaccination will be readily adopted as a safeguard. The antivaccinationist will think twice before he exposes himself or resists or refuses vaccination in Minnesota after January 1, 1908.

BARBER'S ITCH

Some years ago the legislature created an examining board to pass upon the knowledge and qualifications of barbers. The board did a flourishing business for a time, and the examiners created a sensation, within certain limits, but, like many ephemeral boards, the time came to tire of the pseudopolitical toy, and the necessities for the board faded away.

If ever a board had an opportunity to do good work, the Barbers' Examining Board was in an enviable position. If reports are true that barber's itch is prevalent all over the state, it is time for some kind of a board to wake up and see that the barber knows enough to keep clean. Complaints are frequent that in the small shops, those in the city and country towns particularly, the barber is often untidy, his linen is unclean, and he does not hesitate to use the same towel on more than one person. If this is true, and there is no reason to doubt this information, the examining board had better inaugurate a course of lectures for the would-be barbers.

One barber-shop in one of the larger cities has spread the itch over a large community, and the itch being no respecter of persons has invaded the sanctity of the face of many a man who is otherwise clean.

If barber's itch is communicable by the use of soiled towels, is it not probable that other diseases may be communicated in the same manner? The physician should warn the customer that the barber must furnish absolutely clean linen for each operation, particularly for shaving. If necessary the State Board of Health may be called upon to send timely warning to shops from which infection is reported. There is no excuse for the existence of barber's itch, and the man who gets it should look well to the source of infection, and make a prompt report to the health officer.

STATE HOSPITAL APPOINTMENTS

The State Hospitals for the Insane, particularly the institution located at St. Peter, Minn., have been greatly in need of assistant physicians. Usually the vacancies are filled from the ranks of the younger men in the profession who have had a year of training in a general hospital. This year, for some unknown reason, there is a scarcity of applicants. The medical man who is seeking an opportunity to broaden his education should welcome an appointment at one of the hospitals for the insane with favor. A year in a general hospital is really a year of clinical training in a medical school. One, two, or three years in a state institution, among the class of individuals found there, is of inestimable value

to the general practitioner. It teaches medicine from a different standpoint, and shows the new medical man a new side of his profession and diagnostic possibilities. Here are found the abnormal mental states associated with anatomical and physiological defects, and the combination of various disease states that account for the presence of mental symptoms. The average practitioner knows little enough of mental and nervous diseases and practically nothing about the care and management of the insane. The true student of medicine who studies general disease states among the insane is surprised at the clinical and post-mortem findings, and his viewpoint is widened and shifted from its original base.

Arterial, viceral and bacteriological evidences are so often associated that it is comparatively easy to understand why the mental manifestations are present in certain individuals. The study of the history of the early life of an individual with his inherent or acquired abnormalities, the course and progress of his symptoms, and the onset of his mental twist, is like the study of any other case in which the special symptoms are referred to non-nervous organs, an advanced view of internal medicine and the most interesting and instructive to the general practitioner.

It is surprising that so few of the younger medical men do not pay more attention to this phase of medicine. The opportunities offered at the State Hospitals for the Insane are manifold. The interne is trained in executive management, learns discipline among an army of employes, is a part of the teaching force of the nurses' training-school, studies all types of disease under the most favorable methods, and is able to follow his patient through his clinical, microscopic, and necropsy travels, and, last but not most unimportant, is paid well for his efforts by a comfortable salary.

Medical men who have been trained in an institution of this sort do not suffer an annoying wait for patients after the service is ended. They have acquired that something which stamps the man as a competent student and practitioner. If institution life appeals to one or brings out an executive ability that is latent, there is always an opening for the right man.

Applications for positions may be made to any of our state hospitals, and the applicant who has had a year of training in a general hospital will receive careful attention.

BACK NUMBERS

If your file is not complete, it is well to ask for missing numbers at this time. We will send such numbers to our subscribers without charge, but we may not be able to supply them after the first of the year.

CORRESPONDENCE

DISREGARDING THE LAW

St. Paul, Oct. 25, 1906.

TO THE EDITOR:

I will thank you to publish the enclosed letters which are copies of letters sent by me to the persons named therein.

Respectfully,

H. M. BRACKEN

Secretary of the State Board of Health.

October 18, 1906.

The Minneapolis Milk Company, Minneapolis.

Gentlemen: You have been representing to your customers that you sold "certified milk." Such information coming to me, I called at your place of business on the evening of September 24th and asked if you had certified milk. Your clerk replied that he thought so. I thereupon told him I wanted a quart. Thereupon he sold me a bottle of milk. Later, I sent other parties to your place of business, who also purchased what was represented to them to be certified milk. In each instance these bottles bore the label: "Irwin Sanitary Milk." You are therefore misrepresenting things when you state that you sell certified milk, or when you sell any milk as certified milk. The standard of certified milk is defined in the Regulations of the State Board of Health, which was given legal publication in the St. Paul Pioneer Press of July 23rd, July 30th, and August 6th. Also, in THE NORTHWESTERN JOURNAL-LANCET, published in Minneapolis, under date of Sept. 1st. (Rule 101.) There is no milk of this standard now sold in Minneapolis or St. Paul.

The State Board of Health, at its regular meeting, October 9, 1906 instructed me to inform you that neither you nor your employees should represent that you are selling or sell bottled milk as certified milk, unless it comes under the Regulation (101) referred to above. Still further, the Board instructed me to inform you that you should not peddle milk from a wagon marked "Certified Milk," as you have been doing. This latter refers to the fact that until quite recently, if not up to the present date, you have been distributing milk with the wagon formerly used by Mr. Loring, said wagon bearing the mark "Certified Milk," and thus misleading some of your customers who have spoken to me about the matter.

Trusting that you will see to the correction of these errors at once, I am,

Very respectfully,

(Signed) H. M. BRACKEN.

St. Paul, October 18, 1906.

Dr. P. M. Hall, Commissioner of Health, Minneapolis.

My Dear Doctor: A petition has been filed in this office by residents of Minneapolis which reads as follows:

"Whereas, There is now located a public nuisance at Twenty-first avenue south and Mississippi river, in the city of Minneapolis, where night-soil is dumped every night from cesspools and water-closets; and whereas, the same creates a noisome smell detrimental to public

health and the enjoyment of home and property; and, whereas, complaints have been made to the Health Department in and for the city of Minneapolis, and such Department refuses to discontinue said nuisance or in any way interfere therewith; therefore, we, the undersigned, do hereby most respectfully pray that said Board investigate this complaint and take such steps as will be effective to discontinue said nuisance."

* * * * *

The Minnesota State Board of Health, at its regular meeting, October 9th, instructed me to inform you that dumping of night-soil into the Mississippi river is contrary to the state law, and must be discontinued at Minneapolis under the order of this Board. I beg to draw your attention to the fact that not only is this dumping of night-soil into the river contrary to the laws of Minnesota, but is also contrary to the laws of the United States relative to navigable rivers.

Trusting that this matter will receive your prompt attention, I am,

Very truly,

(Signed) H. M. BRACKEN.

REPORTS OF SOCIETIES

RAMSEY COUNTY SOCIETY

SPECIAL NOTICE

The November meeting of the Ramsey County Medical Society will be a special meeting and will be held on Monday evening, November 19, probably at the Elks' Hall, in the Lowry building. Dr. Maurice H. Richardson, of Boston, is coming to St. Paul for this meeting and will read a paper entitled: "The Indications and Contra-Indications for Resort to Surgery." It is hoped that there will be a large attendance to hear Dr. Richardson, and a special invitation is hereby extended to physicians throughout the state to attend this meeting.

HENNEPIN COUNTY SOCIETY

A regular mid-monthly meeting of the society was held October 15th. Dr. F. C. Todd, the president, was in the chair, and 100 members were present.

Dr. K. E. Farr read a paper on "The Prevention and Treatment of Cancer," and Dr. R. E. Farr spoke on "The Early Diagnosis of Cancer," illustrating his paper with a large number of lantern-slides.

The discussion that followed was participated in by a dozen doctors and lasted till near midnight.

Dr. S. Marx White presented a specimen of hemorrhage into the suprarenal gland in an infant three days old.

C. H. BRADLEY, M. D., Secretary.

CAMP RELEASE DISTRICT SOCIETY

Camp Release District Medical Society held its regular quarterly meeting at Montevideo, on Thursday, October 25. Dr. D. N. Jones of Gaylord presiding.

Dr. B. F. LaRue, of Appleton, was elected to membership. The following papers were read: "Separation of the Epiphysis of the Lower End of the Femur, with Report of a Case," by Dr. R. D. Zimbeck, of Montevideo, and "History of Medicine," by Dr. H. W. Hendrickson, of Montevideo.

In the evening Dr. H. A. Tomlinson, of St. Peter, President of the State Association, delivered a most excellent address upon "Sanitation and Public Health," to which the public was invited.

The next meeting, which will be the annual meeting, will be held at Granite Falls on the fourth Thursday in January, 1907.

R. D. ZIMBECK, M. D., Secretary.

STEARNS-BENTON SOCIETY

The Stearns-Benton County Medical Society held a very interesting meeting October 18, at St. Cloud. Dr. G. A. Chilgren presented a very interesting case—a male adult with undeveloped pectoralis major muscles and other interesting features.

Dr. C. B. Lewis presented and explained a rare and interesting pathological specimen.

Dr. W. L. Beebe reported cases of typhoid fever that are rare and interesting.

Dr. Max J. Kern reported an unusually rare and interesting case of typhoid fever.

Dr. J. C. Boehm read a paper on "Chronic Nephritis: Its Treatment by Static Electricity, with Results."

It was decided to hold regular monthly meetings, and to prepare a list of dead-beats, known as a reference list.

J. C. BOEHM, M. D., Secretary,

CIRCULARS RELATING TO TYPHOID FEVER

ISSUED BY THE MINNESOTA STATE BOARD OF HEALTH

In connection with the new regulations of the Minnesota State Board of Health, requiring the reporting of all cases of typhoid fever, the following circulars have been prepared for distribution. These circulars can be secured at any time by writing to the Secretary of the Minnesota State Board of Health. In writing for a circular, its number should be indicated.

Circular No. 1

TO PHYSICIANS AND HEALTH OFFICERS

1. Provision is made for the reporting of every case of illness or death from typhoid fever as well as every case of illness or death from *suspected* typhoid fever. Should the sick person change his or her residence the proper health authorities must be notified of this fact. (See Sanitary Rules and Regulations relating to Typhoid Fever.) Reports of Typhoid fever cases if made through the local health officer must be sent by that official to the Secretary of the Minnesota State Board of Health, on blanks furnished for that purpose by said State Board, at the end of each month.

2. Immediately after a notification has been received of typhoid fever existing in any place, the State or local health officials co-operating with the attending physician shall investigate as to the origin of the disease. Inquiries should also be made at once as to whether there are any other suspicious cases in the neighborhood

of the sick person. Attention must be given not only to suspicious cases of intestinal disturbances, but also to illnesses of long duration of a feverish or indefinite character.

3. Under certain circumstances, clergymen, teachers, municipal officials and other suitable persons, may be asked to report any suspicious cases of typhoid fever that may have come to their knowledge.

4. The health officer must be allowed admittance to the patient, or corpse, if this is necessary in order to determine the nature of the disease. Every assistance possible must be rendered the health officer when he is making investigation as to the nature of the disease.

5. In order to establish bacteriologically the existence of typhoid fever, suitable material from the patient should be sent at once by the local Health Officer or attending physician to the Minnesota State Board of Health Laboratory, located on the University Campus in Minneapolis, for investigation.*

6. In special cases an expert may be sent to investigate local conditions. The local authorities must see to it that such expert shall receive every assistance possible in making the necessary investigation. If requested by the expert, he shall be accompanied by a police of-

*For laboratory outfits write to Dr. F. F. Wesbrook, director, Minnesota State Board of Health Laboratories, Minneapolis, Minn.

ficial or constable when making his inspection. The local Health Officer shall assist and take part in such special investigation.

7. Isolation of a known or suspected case of typhoid fever must be carried out in order to prevent the spread of the disease. If it is not possible to carry out isolation properly in the dwelling house of the sick person, he or she should be removed to a suitable hospital. This is especially important if the sick person is living in a boarding house or hotel, educational institution, prison or similar establishment; or in rooms connected with premises from which are sold milk, vegetables or other provisions; or if the relatives of the sick person are particularly endangered, as in the case of a very unclean or overcrowded dwelling, or the presence of a large family.

Should a patient under observation be moved from one residence to another, this must be done under the supervision of the local Health Officer, and the premises from which he or she has been removed must be properly disinfected. (See Sanitary Rules and Regulations relating to Typhoid Fever.)

8. It may be found necessary for the more effectual control of typhoid fever to remove healthy persons from a dwelling where the disease exists, leaving the patient or patients in the house properly cared for, instead of removing them to a hospital or other suitable place for isolation.

9. It may be found necessary in exceptional cases to remove every one from a dwelling if particularly unfavorable conditions prevail therein, such as overcrowding, uncleanliness, etc.

10. It is advisable to placard houses in which typhoid fever patients are being cared for.

11. Public conveyances must not be used for the transportation of typhoid fever patients.

12. Nurses and other attendants upon typhoid fever patients must submit to the requirements of the local Health Officer, so far as these are necessary to prevent the spread of this disease.

13. The remains of those dead of typhoid fever must be prepared for burial by a licensed embalmer.

14. Those in charge of typhoid fever patients must be constantly urged by the local health authorities to properly disinfect the excretions of such patients, as well as all articles that have come in contact with the same during the progress of the disease.

Individuals caring for typhoid fever patients must disinfect their hands.

In addition to this constant disinfection of persons and articles in the sick-room, a final disinfection of the house and its contents must be carried out after the patient has been removed

from the premises to a hospital, or after the recovery or death if the patient is kept at home.

15. Disinfection of premises, patients and attendants must be carried out under the instructions of the State or local health authorities.

All persons who by reason of their employment come into contact with persons ill with typhoid fever, or with articles which the latter have used, such as nurses, disinfectors, washerwomen, those who lay out the dead, etc., must conform to the general disinfection regulations.

16. The sanitary authorities (State and local) shall consult together as to whether public gatherings ought to be prohibited in any certain locality where typhoid fever is prevailing as an epidemic.

17. School children from infected families must be kept from school so long as in the opinion of the State or local Health Officer there is danger of spreading typhoid fever by their attendance at school. In violent epidemics of typhoid fever occurring in a locality it may be necessary to close the schools. Teachers who are exposed to typhoid fever infection must be excluded from giving instruction so long as there is any danger of their infecting others.

18. Any industry through which a spread of infectious matter may be feared, especially when such is engaged in the manufacture and sale of food or delicacies in a house where a person is ill with typhoid fever, can be subjected to limitations in its output, or the place may be closed, if in the opinion of the sanitary authorities a continuation of the business would be dangerous.

19. It may be advisable for the local health officials to supervise the sale of milk or dairy products in a locality where numerous cases of typhoid fever are present.

20. It may be necessary to prohibit or limit the use of wells, ponds, lakes, brooks, or public water supplies, as well as of public baths, swimming and washing establishments and public lavatories in localities where typhoid fever is prevailing, or where an epidemic is threatened.

Circular No. 2

FOR GENERAL DISTRIBUTION

Typhoid fever is an infectious disease caused by a specific germ generally present in the stools and urine of typhoid fever patients and sometimes present in the sputum, and the excretions of the nose and saliva.

If these germs find their way to body or bed-linen, to clothes, floor or tableware, to milk, vegetables, fruit or salads, they can easily enter the systems of other persons.

The disease can be carried by drinking water, and by infected water when used for cleansing

eating and drinking utensils or uncooked vegetables or fruits.

The fact that flies can transmit this disease is well established.

Transmission of the disease by soiled clothing and other articles used by patients is a common source of infection.

Water used for washing and bathing typhoid fever patients can also cause infection and must be rendered harmless by disinfection before it is thrown out. Such water must not be emptied near wells or other water supplies.

If the typhoid fever germ is transmitted directly to persons in close contact with the patient, these cases are known as "contact cases."

If the germs are transmitted by articles in general use, such as water, milk, food, etc., epidemics may arise, many cases occurring simultaneously.

Isolation of Patients.—It is very difficult to nurse a typhoid fever patient at home without spreading the infection to others. For this reason it is advisable, when possible, to remove such patients to a hospital. This is especially to be recommended where the infection of a large family of people is to be feared.

If single cases occur where transportation to a hospital is impossible the patient should be isolated in a room of the dwelling. All unnecessary communication with the patient must be avoided. No one should visit a person suffering with typhoid fever unless compelled to do so. Children especially should not be permitted about a typhoid fever patient, as experience shows that they can easily become infected and carry the disease to others. Children belonging to families where typhoid fever exists should be excluded from school unless the patient has been removed from the home.

A room occupied by a typhoid fever patient should be very plainly furnished. Carpets should be removed, and if rugs are used these should be disinfected daily. The floor should be washed with a disinfecting solution at least once every day. Special pains must be taken to exclude flies from the sick-room or from the soiled clothing or excreta of a typhoid fever patient.

Conduct of Nurses.—Persons entrusted with the care of typhoid fever patients should wear washable clothing. They should observe the greatest cleanliness. After coming in contact with the patient, or with the patient's linen or bedding, or after removing the evacuations of the patient, the hands of the nurse should be thoroughly cleansed with soap, brush and hot water, and disinfected. Especial care must be taken in bathing the patient; the water should be splashed about as little as possible. Nurses are warned not to touch food before cleansing and disinfecting their hands, or to put any article

into the mouth which may have become infected by a patient directly, or by other agencies, such as flies, etc.

As a disinfecting wash for the hands a three per cent solution of carbolic acid, creolin or lysol in water is to be preferred to a corrosive sublimate solution.

Transportation of Typhoid Fever Patients.—If possible, typhoid fever patients should be transported in ambulances. A public conveyance (carriages, street-car, etc.,) should not, as a rule, be used for such purpose.

The bodies of those dead of typhoid fever must be prepared for burial by arterial and cavity injection with an approved disinfecting fluid, and the exterior of the body washed with the same fluid. In Minnesota only a licensed embalmer is permitted to prepare the remains of one dead from typhoid fever for burial or for shipment.

Trade in Provisions.—The preparation, storage and sale of provisions in or near rooms occupied by typhoid fever patients must not be allowed under any circumstances.

During an epidemic particular pains should be taken in the care and use of milk, fruit, vegetables, etc., that are used as food in a raw condition.

Circular No. 3

DISINFECTION

Disinfection of Excreta.—The work of disinfection should commence with the beginning of the treatment of a case of typhoid fever, and should continue during the whole course of the disease. All articles of bed clothing and of body clothing should be disinfected as soon as removed from the bed or from the patient.

All excretions (from bowels, bladder or stomach) from a typhoid fever patient should be received in easily cleansed vessels and never thrown into closets or upon the ground until thoroughly disinfected. Probably the best disinfectant for such use is the so-called "milk of lime." This should be freshly prepared each day. It consists of one part by weight of freshly slaked lime with eight parts of water. Of this "milk of lime," a ten per cent solution should be thoroughly mixed with the evacuations and allowed to stand for at least an hour before being finally thrown into a vault or sewer. In cases of emergency, if no disinfectants are at hand, the evacuations may be buried in places far removed from drains, wells and buildings. Care must be taken not to carelessly soil the floor, clothes, etc., with even a trace of excrement.

The excreta and urine of typhoid fever patients should never be thrown near any place from which water for drinking or other domestic

purpose is taken. The vessels containing the excreta and urine, after being emptied, should never be cleansed at pumps or taps from which water is taken for domestic use.

The thorough disinfection of the discharges from the patient, immediately after they are passed, is of prime importance.

Fresh excreta may be disinfected in rural districts, by pouring upon them, in the vessel, at least five or six times their volume of boiling water, covering the vessel and letting it stand until it has cooled.

For the disinfection of excreta in privy vaults use milk of lime in large quantity, sufficient to thoroughly saturate the contents, and, after the vault is emptied, gallon after gallon should be poured in until the ground beneath the ordinary privy is completely saturated with the milk of lime.

One fact should here be borne in mind. Many typhoid fever patients give off, or excrete the infection of typhoid fever during the very earliest days of their illness. It is therefore important to consider any privy vault which may have been used by a typhoid fever patient in the early stages of the disease as infected, and requiring thorough disinfection.

The final disposal of typhoid excreta should be with the view of avoiding the possibility of their reaching, by surface drainage or by percolation through the ground, any river, lake, well, or spring that serves as a source of water supply. Remember that in the disinfection of excreta there is always a fair probability of unsuccessful disinfection at some point, so do thorough work.

Disinfection of Water-Closets.—The seats of water-closets that have been used by typhoid fever patients should be thoroughly cleansed with a one to 2,000 parts solution of corrosive sublimate.*

The evacuations of convalescing typhoid fever patients may contain the infectious germs for a long period. Such individuals must be treated as if they were still ill, so far as disinfection is concerned, until the physician in charge declares that infection is no longer to be feared.

The Sputum.—The sputum of the patient must be given special attention. Handkerchiefs and cloths which have been used must be placed for at least one hour in a three per cent solution of carbolic acid, creolin, lysol or other equally efficient disinfectant, before being sent to the laundry. It is better to use rags or Japanese paper napkins for collecting the sputum or wiping the mouth and nose of a typhoid fever patient, for these articles can be burned after

being used, thus preventing the danger of infection from this source.

Treatment of the Body and Bed-Linen, Clothing, Etc.—All washable clothing should remain at least one hour in a three per cent solution of carbolic acid or other equally efficient disinfectant, or should be boiled in water before being sent to the laundry. Clothing used by typhoid fever patients which cannot be washed should be disinfected with steam in a disinfecting establishment, if possible. If this is not possible, it should be well brushed with some suitable disinfecting solution. All eating utensils (plates, cups, glasses, spoons, forks, knives, etc.,) used by a typhoid fever patient should be thoroughly cleansed with a hot soda solution before being used by other persons.

If clothing is soiled it should be removed immediately from the patient or the bed and placed in a disinfecting solution, or in soap and water. Clothing which has not been stained may be disinfected by immediately steaming or boiling.

Woolen Clothing.—Disinfect with formaldehyde fumigation, using large doses, the disinfection being done in a tight closet or other airtight enclosed space. Or such clothing can be disinfected by soaking in a solution consisting of

Solution of formaldehyde, 6 ounces.
Water, 1 gallon

the solution being used in a wooden or pulp-ware wash-tub.

Bedding.—Straw beds should be taken out of doors, emptied and the straw burned, but the tick may be disinfected. Disinfect feather beds, pillows, quilts, comforters, and blankets in a steam disinfector when practicable, or if not soiled, with formaldehyde in large doses. The burning of mattresses when discharges have penetrated them, and steam disinfection is impracticable, is advisable.

Rugs and Carpets.—Disinfect with steam, or by soaking in a solution consisting of,

Corrosive sublimate, 1 drachm*
Water, 1 gallon

or with formaldehyde in concentrated doses. If the articles are of but slight value burning is preferable to any other form of disinfection.

Lounges, Couches, and Other Upholstered Furniture.—Leave these in place when the room is disinfected with formaldehyde. If of little value, strip off and disinfect the covering as for cotton and linen clothing. Burn worthless filling.

The Hands of Nurses and Others who have attended to the wants of the sick should be disinfected with thorough washing and scrubbing

*Disinfecting tablets of corrosive sublimate are made of such size that one tablet dissolved in a quart of water makes a 1 to 2,000 parts solution.

*This is about a 1 to 1,000 mixture of corrosive sublimate. It is **poisonous**.

in hot soap and water, followed by their immersion in a disinfecting solution, 1 to 1,000 of corrosive sublimate or a 3 per cent solution of carbolic acid.

Disinfection of the Dwelling.—Soiled places on the floor of the sick-room should be covered with a disinfecting solution of carbolic acid, creolin or other equally efficient disinfectant, for one hour, after which the floor should be washed.

After the removal of the patient to a hospital, after complete recovery or after death of the patient, the sick-room and all other rooms used by the patient, together with their contents, should be thoroughly cleansed and disinfected.

Formaldehyde gas can be used for disinfecting closed rooms and is well adapted for the destruction of disease germs which lie on open surfaces. In order to carry out the disinfection of a room with formaldehyde, all windows and doors (except one for the exit of disinfector) should be closed and sealed with strips of paper. After the gas is liberated the room should be kept tightly closed for at least five or six hours. At least twelve ounces of a 40 per cent solution of formaldehyde should be used for each 1,000 cubic feet of space to be disinfected. As formaldehyde is more active in a moist than in a dry atmosphere, steam should be developed or conducted into the space to be disinfected at the same time that the formaldehyde gas is liberated.

Disinfection with formaldehyde should only be carried out according to methods that have been tested, and by trained disinfectors.

After the disinfection is completed, ammonia gas may be introduced in order to neutralize the formaldehyde still present.

In disinfecting with formaldehyde the most rapid possible liberation of the gas is desirable. The least troublesome and the best process is, after the room and everything in it has been made ready, to place the requisite quantity of potassium permanganate in the bottom of a ten-quart pail. Pour upon it the requisite quantity of formaldehyde solution of full strength. The required quantities for 1,000 cubic feet of space are 16 ounces of the permanganate and one pint of the official formaldehyde solution.

The permanganate must go in first. Before the mixture is made, everything must be in readiness, because the disinfector must make a rapid exit from the room.

For the suitable disinfection with formaldehyde of clothing, bedding, and other articles in which penetration must be secured, it is better to treat them by themselves in a small closed room or closet. If they are disinfected in the sick-room, double the quantity of formaldehyde recommended in the preceding paragraph should be used; that is, one pint of formaldehyde and

its requisite quantity of permanganate for each 500 cubic feet of space, instead of 1,000 cubic feet. Clothing when subjected to formaldehyde must be well exposed, preferably over lines.

NEWS ITEMS

Dr. Albert E. Brown, of Waukegan, Ill., has located at Groton, S. D.

Drs. Strauss and Flynn, of Glen Ullin, N. D., have dissolved partnership.

Drs. Vinje and Golseth, of Henning, Minn., have dissolved partnership.

Dr. Charles M. Tierney, of New Hampton, Iowa, has located in Granger.

Dr. L. E. Safely has moved from Bozeman, Mont., to Livingstone, Mont.

Dr. J. L. Stephenson, of Ellendale, N. D., will spend the winter in California.

Dr. S. H. Mitchell, who has spent a year in California, has returned to Tracy.

Dr. C. V. Winsett has given up practice at Wolford, N. D., and moved to Iowa.

Dr. Louis Ramaley, a recent State University graduate, has located at Cando, N. D.

Dr. D. F. Rae, who formerly practiced at Fergus Falls, is located at Moscow, Idaho.

Dr. George T. Joyce and Miss Josephine G. Baier, of Rochester, were married last month.

Dr. R. H. Whetstone, formerly of Argyle, has located in Minneapolis, at 521 Nicollet avenue.

Dr. Wm. Will, who practiced at the Soldiers' Home for several months, has located at Bertha.

Dr. J. S. Tyler, who has practiced at Eagle Bend for the past twenty years, has moved to Minneapolis.

Dr. G. H. Green, a recent graduate of the State University, has located at Reardan, Washington.

Dr. Thomas Mulligan, of Grand Forks, N. D., has gone to Europe for several months to study in the hospitals.

Dr. Knut Hoegh, of Minneapolis, has returned from a summer trip to Europe, mostly in Norway and Sweden.

Drs. Karn and Bolsta, of Ortonville, opened their private hospital on Oct. 30th, inviting the public to the opening.

Dr. George M. Williamson, of Ardock, N. D., has gone to Edinburgh, Scotland, to take a post-graduate course.

Dr. W. A. Bessessen, who has been an assistant in St. Mary's Hospital, at Rochester, has located at Albert Lea.

Dr. Wilbur Reynolds, formerly connected with the Rood Hospital, of Hibbing, has begun general practice at that place.

Dr. R. C. Light, who has been practicing a short time at Clark, S. D., will return to Indiana where he formerly practiced.

Dr. W. W. H. Bockman, of Thief River Falls, is in Berlin, Germany, where he will spend several months in special study.

Dr. J. D. Budd, of Two Harbors, recently lectured before the Y. M. C. A. of that place on "First Aid to the Injured."

Dr. A. H. Baldwin, of Kansas City, has located at Dickinson, N. D., and formed a partnership with Dr. H. Davis, of that place.

Dr. J. D. Morrison, of Donnybrook, N. D., who has been doing post-graduate work in Chicago, has returned to his practice.

The directors of Bethesda Hospital of Crookston, made a large appropriation for the purchase of instruments for the hospital.

Dr. C. D. Nelson, of Westbrook, has gone to Europe for a year's work in surgery, and upon his return he will locate at Chicago.

Dr. Carl F. Haish, of Watertown, S. D., will spend the winter in New Orleans, doing post-graduate work in the N. O. Polyclinic.

Dr. George A. Cable died in Minneapolis on Oct. 30th at the age of 60. Dr. Cable practiced nearly a dozen years in Crookston, and then entered the ministry.

Dr. Robert B. Stephenson has returned to Elendale, N. D., from his post-graduate work in New York. He took a special course in eye, ear, nose and throat work.

Dr. G. J. Gislason, of Grand Forks, N. D., has gone to Europe for post-graduate work. He will spend three months in Edinburgh, six in London, and three in Berlin.

Dr. J. D. Taylor, of Minot, N. D., county physician of Ward County, recommends to the State Board of Health, that the state establish a sanatorium for the tubercular poor.

Dr. C. H. Kohler, of Minneapolis, was married last month to Miss Bertha Stephenson, of St. Cloud. Dr. and Mrs. Kohler will travel in Europe and Asia later in the winter.

The fifth anniversary of the founding of St. John's Hospital of Springfield was celebrated last month, and the review of the work done made many new friends for the hospital.

Miss A. M. Scott has sold her interest in the Dakota Maternity Hospital, of Dickinson, N. D., to Miss Anna Stein, who continues the business. Miss Scott will care for private patients within the city.

The Norwegian Medical Club, of Minneapolis, held its annual meeting last month, and elected the following officers: President, Dr. Knut Hoegh; vice-president, Dr. A. M. Wang; secretary, Dr. I. Sivertsen.

The Red River Valley Society held its annual meeting last month when the following were elected officers for the ensuing year: President, Dr. J. S. Kjelland, Crookston; vice-president, Dr. J. C. Cummings, St. Hilaire; secretary and treasurer, Dr. H. H. Hodgson, Crookston.

The Watertown (S. D.) District Society last month held one of the best meetings in its history. Dr. C. A. Yates, of Clark, read a paper on "Gastric Ulcer," and Dr. H. W. Sherwood presented an unusually interesting paper on the subject of "Strange Things Which We Meet in the Practice of Medicine."

Dr. George Williams, of Ardoch, N. D., president of the Grand Forks District Medical Society, left for Europe last month for special study. The citizens of Ardoch gave Dr. Williams and his wife a farewell banquet, presenting the doctor a gold-headed cane, and giving his wife a gold brooch studded with diamonds.

UNIVERSITY NEWS NOTES

The new building for the Institute of Health and Pathology is approaching completion and will be occupied by the New Year. Dean Wesbrook will transfer the dean's office to this building.

Dr. Julius Parker Sedgwick has been added to the staff of the department of physiology, as instructor in physiologic chemistry. He will conduct the courses in that branch of the subject. Dr. M. Russell Wilcox becomes assistant professor of physiology.

Dr. Herbert W. Davis, of St. Paul, has resigned his position as clinical professor of obstetrics.

Dr. R. H. Mullen has been advanced from the position of junior to that of senior demonstrator of pathology and bacteriology.

Dr. S. Marx White has been promoted to the associate professorship of pathology and bacteriology.

By action of the Board of Regents, a laboratory of pharmacy and experimental therapeutics has been established in connection with the department of materia medica and therapeutics. Negotiations are in progress for the engagement of a laboratory conductor in this branch.

R. O. BEARD, M. D.

PHYSICIANS LICENSED AT THE
OCTOBER, 1906, EXAMINATION TO
PRACTICE IN MINNESOTA

- Abramovich, Jos. H.; Hamline, 1905.
- Allen, Frank A.; Geo. Washington U., 1895.
- Anderson, Norman E.; P. & S. (U. of Ill.), 1903.
- Cosgrove, Jos. H.; U. of Minn., 1906.
- Devine, Robert H.; Jefferson U., 1897.
- Dumont, Frank; Paris (France), 1894.
- Flynn, Wm. T.; Hamline, 1905.
- Friedrich, Robt. O.; Milwaukee Med. Col., 1906.
- Green, Geo. H.; U. of Minn., 1906.
- Hamel, Clarence E.; P. & S. (U. of Ill.), 1906.
- Jackola, John; Rush Med. Col., 1904.
- Lexa, Frank Jos.; P. & S. (U. of Ill.), 1906.
- Ludemann, Alfred H.; U. of Minn., 1906.
- McLaughlin, Jerome E.; U. of Minn., 1906.
- Meilicke, Wm. Alexander; U. of Colorado, 1903.
- Moir, Wm. W.; U. of Minn., 1906.
- Nelson, Henry E.; P. & S. (U. of Ill.), 1904
- Pratt, Chelsea C.; U. of Minn., 1906.
- Ramaley, Louis; U. of Minn., 1906.
- Robinson, Andrew; Queens U., 1895.
- Slocumb, Maude S.; P. & S. (U. of Ill.), 1905.
- Teisberg, Carl Benj.; U. of Minn., 1906.
- Thauwald, Chas. C.; Hamline, 1906.
- Tierney, Chas. M.; U. of Iowa, 1896.
- Valiquet, Ulric; Laval, Montreal, 1906.
- Vistaunet, Peder S.; U. of Minn., 1906.
- Voyer, Emil O.; Hamline, 1906.
- Wald, Rudolf H.; Harvard, 1904.
- Walter, Frederick J.; P. & S. (U. of Ill.), 1904.
- Walters, Franklin R.; P. & S. (Cleveland), 1905.

Sioux Falls, S. D., is soon to have a free public hospital. By her will, just recorded, the late Mrs. Helen G. McKenna left the city property valued at \$25,000 for hospital purposes. The trustees are Thomas H. Brown, John Mallahey, and Dr. Edwin L. Perkins.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during the fine season in the delightful city, write for particulars, to New Orleans Poly-clinic, P. O. Box 797.

FOR SALE

An instrument case, 48 inches wide, 57 inches high, with 5 plate-glass shelves; double doors; golden-oak finish; practically new; cost \$65.00, for sale for \$55.00.—Dr. J. E. Moore, 704 Pillsbury Building, Minneapolis.

FOR SALE

The medical library (standard works) and instruments of the late Dr. F. C. Poehler. Write to or call upon Mrs. F. C. Poehler, Flat 4, 2220 Emerson Ave. So., Minneapolis.

PRACTICE FOR SALE

A good practice in a growing village in a farming country which is thickly settled, is offered for sale by a physician who wishes to locate in a city. No other physician in place; surrounding territory is large; an exceptional opportunity. My house is modern. Price upon application. Address M. L., Care of THE JOURNAL-LANCET.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH
OF MINNESOTA FOR THE MONTH OF SEPTEMBER, 1906

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF SEPTEMBER, 1906

STATE INSTITUTIONS.		Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Fergus Falls, Hospital for Insane.....	8	3															
Rochester, Hospital for Insane.....	6	1															1
St. Peter, Hospital for Insane.....	9	2															
Anoka, Asylum.....	1	1												1			
Hastings, Asylum.....	0																
Faribault, School for Deaf.....	0																
Faribault, School for Blind.....	0																
Faribault, School for Feeble Minded.....	3		2														
Owatonna, School for Dependents.....	0																
Stillwater, State Prison.....	3	1															
St. Cloud, State Reformatory.....	0																
Red Wing, State Training School.....	0																
Minneapolis, Soldiers' Home.....	4																
Totals.....	33	8	2											1			1

REPORTED FROM 71 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE OF MONTH SEPTEMBER, 1906

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Group	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Albert Lea	4,500	5,657	7														3	
Anoka	3,769	4,053	2														2	
Austin	5,474	6,489	5	1													2	
Barnesville	1,326	1,566	*															
Bemidji	2,183	3,800	4														1	
Blue Earth	2,900	2,364	5															
Brainerd	7,524	8,134	13	1	1											6	1	
Chaska	2,165	2,085	*															
Chatfield	1,426	1,300	*															
Cloquet	3,074	6,117	6															
Crookston	5,359	6,794	11												1		5	
Detroit	2,060	2,140	1	1														
Duluth	52,968	64,942	81	7	1	5		2					2	1	5	14	6	
E. Grand Forks	2,077	2,489	1															
Ely	3,712	4,045	15		1	1		2					3			6		
Eveleth	2,752	5,332	8			1							2					
Faribault	7,868	8,279	4												1		1	
Fairmont	3,440	2,955	2															
Fergus Falls	6,072	6,692	7	1		1										1		
Granite Falls	1,214	1,340	0													1		
Hastings	3,811	3,810	0															
Hutchinson	2,495	2,489	1															
Jordan	1,270	1,311	0															
Lake City	2,744	2,877	6														1	1
Litchfield	2,280	2,415	0															
Little Falls	5,774	5,856	19	1			2									2		1
Luverne	2,223	2,272	1															
Le Sueur	1,937	1,842	1															
Madison	1,336	1,604	0															
Mankato	10,559	10,996	11	4													2	
Marshall	2,088	2,243	*															
Melrose	1,768	2,151	*															
Minneapolis	202,718	261,974	225	15	4	12		6		1					10	37	17	
Montgomery	979	1,281	1															
Montevideo	2,146	2,595	0															
Moorhead	3,730	4,794	7				1								2	2		
Morris	1,934	2,003	*															
New Prague	1,228	1,419	8															
New Ulm	5,403	5,720	8	2														
Northfield	3,210	3,438	3	1														
Ortonville	1,247	1,612	2	1														
Owatonna	5,561	5,651	1															
Pipestone	2,536	2,885	0															
Red Lake Falls	1,885	1,797	0															
Red Wing	7,525	8,149	1															
Redwood Falls	1,661	1,806	0															
Rochester	6,843	7,233	8	1	1													3
Rushford	1,100	1,133	0															
St. Charles	1,304	1,238	*															
St. Cloud	8,663	9,422	9															
St. James	2,607	2,320	1														1	1
St. Paul	163,632	197,323	171	16	5	4	1	1					1	4	20	11		
St. Peter	4,302	4,514	3	2														1
Sauk Centre	2,220	2,463	3	1				2										
Shakopee	2,046	2,069	0															
Sleepy Eye	2,046	2,312	0															
So. St. Paul	2,322	3,458	3			1												
Stillwater	12,318	12,435	4															
Thief River Falls	1,819	3,502	1															
Tower	1,366	1,340	*															
Tracy	1,911	2,015	2	1														
Virginia	2,962	6,056	*															
Wabasha	2,528	2,619	*															
Warren	1,276	1,640	0															
Waseca	3,103	2,838	0															
Waterville	1,260	1,383	*															
West St. Paul	1,830	2,100	1															
Willmar	3,409	4,040	5	1		1												
Windom	1,944	1,884	*															
Winona	19,714	20,334	23	3													5	4
Worthington	2,386	2,276	1															

*No report received

REPORTED FROM 66 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF SEPTEMBER, 1906

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Ada.....	1,253	1,515	*	1														
Adrian.....	1,258	1,184	1															1
Aitkin.....	1,719	1,896	1											1				
Akeley.....		1,636	4	1														
Alexandria.....	2,681	3,051	1															
Appleton.....	1,184	1,321	0											1				
Belle Plaine.....	1,121	1,301	*															
Benson.....	1,525	1,766	0															
Breckenridge.....	1,282	1,850	3	1														
Buffalo.....	1,040	1,124	2															
Caledonia.....	1,175	1,405	*															
Canby.....	1,100	1,505	0															
Cannon Falls.....	1,239	1,460	1															
Cass Lake.....	546	1,062	*															
Chisholm.....		4,231	10															
Dawson.....	962	1,056	1															
Delano.....	967	1,023	1															
Fosston.....	864	1,000	*				1											
Frazee.....	1,000	1,146	0															
Glencoe.....	1,780	1,805	0															
Glenwood.....	1,116	1,718	*															
Graceville.....	856	1,032	2															
Grand Rapids.....	1,428	2,055	1															
Hallock.....	805	1,014	2	1														
Hibbing.....	2,481	6,566	16	1														
Jackson.....	1,756	1,776	0															
Janesville.....	1,254	1,205	*															
Kasson.....	1,112	1,049	0															
Kenyon.....	1,202	1,252	0															
Lake Crystal.....	1,215	1,231	2															
Lanesboro.....	1,102	1,041	*					1										
Long Prairie.....	1,385	1,256	1															
Madelia.....	1,272	1,290	0															
Milaca.....	1,204	1,319	1															
Mountain Lake.....	959	1,063	3															
North Mankato.....	939	1,129	1															
North St. Paul.....	1,110	1,400	1															
Olivia.....	970	1,019	1															
Osakis.....	917	1,056	*															
Park Rapids.....	1,313	1,719	1															
Pelican Rapids.....	1,033	1,095	*															
Perham.....	1,182	1,366	*															
Pine City.....	993	1,092	0															
Plainview.....	1,038	1,140	0															
Preston.....	1,278	1,320	0															
Princeton.....	1,319	1,704	*															
Renville.....	1,075	1,229	0															
Rush City.....	957	1,041	1															
Rushford.....	1,062	1,040	1															
St. Louis Park.....	1,325	1,491	1															
Sancti-one.....	1,189	1,589	3	1														
Sauk Rapids.....	1,391	1,552	4															
Scanlon.....		1,122	5			1												1
South Stillwater.....	1,422	1,572	0															
Springfield.....	1,511	1,546	1		1													
Spring Valley.....	1,770	1,573	1															
Staples.....	1,504	2,163	*															
Two Harbors.....	3,278	4,402	*															
Wadena.....	1,520	1,868	0															
Wells.....	2,017	1,814	*															
West Minneapolis.....	2,250	2,530	5															
Wheaton.....	1,132	1,346	0															
White Bear Lake.....	1,288	1,724	2															
Winnebago City.....	1,816	1,553	3															1
Winthrop.....	813	1,031	0															
Zumbrota.....	1,119	1,129	0															
State Institutions.....			33	8	2											1		1
Other parts of State.....	1,012,328	1,085,886	437	35	8	15	1	2	1	1	1	1	8		9	53	20	1
Total for State.....	1,751,395	1,979,658	1255	108	24	43	5	17	1	1	1	1	15	5	39	178	74	2

Still births and premature births, 56 (not included in above totals).

*No report received.

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GASTRIC ULCER*

BY M. C. MILLET, M. D.

ROCHESTER, MINNESOTA

The tendency of acute ulcer of the stomach is to heal and not to become chronic. More than two-thirds of all acute ulcers are located in the mid-portion of the lesser curvature and toward the cardia, and hence are prone to be symptomless. As a consequence, the great majority that come to us for treatment are suffering from chronic and recurring ulcer, or its results. Undoubtedly, many chronic ulcers exist and oftentimes heal without having produced symptoms. As reported by Fenwick, 3 per cent of all perforations occur in patients from whom no previous history of ulcer could be obtained. The location of the ulcer, whether in the pyloric, heavy muscled portion, or along the lesser curvature nearer the cardia and its extent, whether simply mucous or involving the muscle and peritoneum, are important factors in determining the symptomatology.

There must be a large class between those which present no symptoms and those which have the classical history in which the symptoms vary within wide limits. And it is in this great intermediary class that the difficulties of diagnosis are encountered.

Are there any facts or conditions present with sufficient frequency to serve as a basis for diagnosis?

First, *The Periodicity of the Attack*.—Whatever the symptoms complained of may be, they are prone to appear in distinct attacks. The attacks of "stomach trouble" are capable of wide variations, both as regards length of time and

symptomatology, so much so that the periodic nature may be lost sight of, even by the patient himself. During the interval between attacks there may be complete relief from symptoms or simply an amelioration. If the latter is the case the symptoms will be much the same as those complained of during an attack, although less severe. The duration of the attack may vary from a day or two to several months. The symptomatology may vary from slight stomach distress, fullness, eructations, etc., to severe pain, nausea and vomiting, and perhaps hemorrhage. All or any one of these symptoms may constitute an attack. It is of interest to note that the symptoms of each succeeding attack are the same, or, at least, do not tend to the wide variation which is so often manifested by a neurosis. Without any apparently good reason the attacks are prone to appear with great regularity at certain seasons of the year. In many they occur regularly in the spring and fall.

Second, *Loss of Flesh*.—The question of nutrition is one which may call for considerable exercise of judgment. In general it may be stated that a patient suffering from actual stomach ulcer for any considerable length of time will lose flesh. A knowledge of the habits of life and occupation is here of some real value. The patient who habitually does not work or who has voluntarily given up his business and devotes his time to religiously taking care of himself, and his stomach, may maintain a normal body-weight in the presence of actual ulceration, but the patient who makes the effort to attend to his regular business, especially if it be manual

*Read before the Olmstead County Medical Society, June 1906.

labor, finds that less food means less suffering, and, as a consequence, he loses flesh. There is a class which may be termed the pre-ulcer stage in which there may be no loss of flesh. In most of these cases one hesitates to make a positive diagnosis of ulcer, though feeling that eventually it will become so. Their complaint is most pronounced three and four hours after a meal, and is relieved by food. Their acidity tends to be high, though perhaps not reaching the maximum of normal; at any rate it is high for the individual. As a rule, the fat individuals complaining of stomach symptoms are suspicious. They may have gall-bladder disease, chronic appendicitis, or, what is more common, a neurosis.

Third, *Test-meal Findings*.—From the compilation of the examinations of nearly 100 ulcer cases, submitted to operation in St. Mary's Hospital in 1905, recently made by Dr. Plummer, the following proposition seems justified, viz., that any case, regardless of symptomatology, which does not show the presence of HCl is not ulcer; in other words, all those cases which were proven to have ulcer had HCl present, either free or combined, and the tendency was toward a high acidity. The exceptions to the above findings occur in cases of long-standing pyloric stenosis, and are undoubtedly due to the inhibition of the secretory functions produced by fermentation and excessive vomiting. In the absence, then, of pyloric obstruction and HCl, we must look for some other cause for the symptoms rather than ulcer. It may be pernicious anemia, cancer, or, more rarely, some form of a neurosis.

Given, then, these three conditions, periodicity of complaint, loss of flesh and the tendency to high acidity, a patient of the chronic-ulcer age, from 25 to 40 years of age, and even in the presence of meager confirmatory evidence, one cannot go far wrong in making a diagnosis of ulcer. The confirmatory evidence is varied, and for convenience in detailing will be divided into groups:

Those symptoms due to the results or accidents of ulceration. The symptoms of pyloric obstruction need no description. Those of cardiospasm or other form of cardiac obstruction are very similar, oftentimes, and must be distinguished. If the obstruction is pyloric, the tube passes readily into the stomach and withdraws acid contents, and a radiograph of the esophagus shows no dilatation. The cause of the obstruction must be diagnosed from a knowledge of the previous history,—whether cancer, ulcer, or adhesions. The presence of a pyloric tumor is suggestive only of cancer, it being not at all uncommon in ulcer. Acute perforation is usually recognized from the local condition of pain, rigidity, etc., and the previous history of

ulcer. In the absence of a previous stomach-history the diagnosis is more problematic. The local condition may, beyond question, signify perforation of something. These two points should be considered: *First*, acute perforation of the gall-bladder is not so likely to occur without previous history as perforation of the stomach; *secondly*, perforation of the stomach is most liable to occur shortly after a full meal.

The symptoms of chronic perforation and adhesions are similar. While there may have been ulcer symptoms before, they are more increased in severity, and, in addition, there is more epigastric soreness and lameness in getting around. There may be the previous history of acute, severe sickness, indicating the acute perforation, or the increased pain and soreness may never have been severe enough to confine the patient to the bed.

The cases in which pain bears a definite relation to food usually present, or soon develop, other typical symptoms, the detailed description of which you are familiar with.

The great middle class in which the complaint is more or less definite of stomach symptoms includes a great variety of local and constitutional conditions; such, for instance, as cardiospasm, hyperchlorhydria, atonic dilatation, and ptosis, cancer of the stomach or liver, pylorospasm, duodenal ulcer, gall-stones and appendicitis, tabes, Addison's disease, pernicious anemia, and neurasthenia, a detailed differentiation of which would hardly conform to the limits of a readable paper. Fortunately, local or general conditions often come to our aid, and point the way to a correct diagnosis.

Eructation of gas and a sense of fullness are perhaps the most common symptoms in this class of cases. When due to ulcer, belching is most apt to occur two to four hours after food. The burning of ulcer tends to come soon after food, and is less liable to be relieved by solids, though it may be by fluids, especially milk.

Nausea produced by ulcer rarely occurs with an empty stomach, and it tends to reach its height some considerable time after food is taken. The same may be said of vomiting, with the addition that when the stomach is empty the efforts at vomiting cease and all symptoms for the time are relieved.

The vomiting of blood properly comes under the head of classical symptoms, and is mentioned here simply to emphasize its comparatively rare occurrence. There was a time when jaundice was looked upon as one of the necessary symptoms of gall-stones. In still more recent years stomach hemorrhage was looked upon in much the same light in its relations to ulcer. When it does occur it is sudden and quite copious, at least

something more than streaks of blood after prolonged retching, and occurs at distinct periods. During the interval between attacks it is rare to find even a trace of blood by the most delicate chemical tests. This characteristic is of strong differentiating value when diagnosing ulcer from those conditions which produce more or less steady hemorrhage. Pain and tenderness are usually circumscribed within a small area and may bear, apparently, no relation to food, many times.

Though it is rare to find a patient with ulcer complaining of pain in the morning before breakfast, it may begin soon after the first meal and perhaps not until toward evening; but when once established it is more or less persistent until the stomach is empty. The pain is variously described as burning, gnawing, dull aching, or cramp-like. It may be quite severe for a few minutes, disappear for a short time, and re-appear; or it may be continuous for two or three hours at a time. At times it may be hard to draw the line between actual pain and the sense of weight in the stomach, discomfort, and fullness complained of.

In these atypical cases it is usually difficult to establish a definite relation between the pain and the time of taking food. Patients may not be able to state just when they feel the worst, and yet may convey an impression that in some way it is food which makes the trouble. Many will state that if they did not eat they would feel good, and still are unable to definitely locate the

time. It may vary at different times in the day, or be different from one day to another; but throughout an attack there is a strong tendency for the pain to exhibit a certain uniformity from day to day.

No attempt has been made in this paper to differentiate ulcer from other conditions except by suggestion. In these atypical cases a carefully taken history of the present and past complaint is all important, and no examination is complete without a test-meal. If certain symptoms or groups can be made to fit a fundamental principle, like "periodicity," a reliable diagnosis is more probable. After we have exhausted our resources we are oftentimes compelled to hold a diagnosis in reserve.

The treatment of acute ulcer is essentially medical. The main indications for operation are perforation, actual or impending, and repeated hemorrhages that are evidently endangering life. No single hemorrhage should call for operation, for there may never be a second one. In the chronic cases no such definite statements can be made.

In general, the chronic case should be submitted to operation before the patient has established the reputation of a chronic dyspeptic, or become unable to attend to a normal amount of business. The case over 45 years of age should be more urgently advised than the one of 30, for the double purpose of intercepting possible malignancy in the base of an old ulcer and the preventing of such future development.

THE MEDICAL EXPERT WITNESS*

By J. W. ANDREWS, M. D.

MANKATO, MINN.

Legal medicine is a science known as *medico-legal science*. It is not an exact, but an applied, science. We cannot have a broad comprehension of any subject without having a clean-cut knowledge of the terms and phrases inherent in that subject. The different names expressive of medicolegal science are very loosely used by both lawyer and physician. Medical jurisprudence, forensic medicine, state medicine are often used interchangeably, but they are not synonymous terms.

Medical jurisprudence is that branch of medicolegal science which treats of questions of medical law. It is the legal part of the science, it is the lawyer's part.

Forensic medicine is that part of medicolegal science which treats of the application of medical, surgical, obstetrical, and allied subjects to the elucidation of doubtful questions in law. It is the medical part of the science; it is the physician's part.

A lawyer may be well versed in medical jurisprudence and know but little about forensic medicine; a physician may be well versed in forensic medicine, and know but little about medical jurisprudence. Neither can be a master in his profession without having a knowledge of both.

State medicine is broader in its meaning than either of the above branches. It includes, besides forensic medicine, hygiene, public health, and medical education. It does not include medical jurisprudence. Forensic medicine includes tox-

*Read before the Minnesota State Medical Association, June 19-21, 1906.

icology, the purpose of which is to detect criminal poisoning.

Many physicians are indifferent to medicolegal practice. They say they have no time to sit around the court-room, and are unwilling to act as expert witnesses. Such a position is, perhaps, all right; but these physicians are not always their own masters in regard to acting as expert witnesses. Let us assume that poison has been administered to some one with criminal intent. The physician is called to attend the poisoned person, and in spite of skillful treatment and every care the patient dies. Here the physician's duty ends, but the services of the medical expert begins. The one who is suspected of administering the poison is by process of law brought into court; and the physician, if need be, is also brought into court by the same process. Whether he wills it or not, he is, by virtue of his professional relation to the dead man, transformed from an attending physician to an expert witness, facing judge, jury, and opposing attorney. He must tell how certain poisons act on the human system, what a physiological dose is, what a lethal dose is, and many other questions brought out by the prosecution. Then he must submit to the searching, scathing cross-examination of the attorney for the defense. The defense is sure to plead that the corpus delicti came to his death by reason of some disease, and the expert must be able to defend his position by showing that the symptoms and signs preceding the death were not in harmony with anything other than poison by a certain drug. If he has never posted himself on medicolegal subjects he will now wish he had, and will probably do so in the future, so that he may never again be humiliated in the halls of justice, and bring discredit upon himself and his profession.

History.—The early history of legal medicine is very fragmentary. For ancient wisdom we look to Egypt, Greece, and Rome. In Egypt, at a remote period, the functions now exercised by the expert medical witness were exercised by the lawyer. He was his own medical expert. One can readily see the injustice of this. Very early Egyptian history tells us that medical questions of fact were admitted into the courts. The law provided that if a pregnant woman was condemned to die the penalty could not be executed until after the birth of the child, but the attorney, and not the physician, must determine whether or not pregnancy existed.

In the early days physicians were not free from suits of malpractice; but a successful defense had to prove that the accused physician had used the prescriptions and modes of treatment transmitted by his most eminent predecessors. The court assumed that no person could improve

upon a curative method so long pursued by physicians and endorsed by the most celebrated members of the profession. If it could be proven that he had not followed the routine treatment of his predecessors he was found guilty of malpractice, and the penalty was death.

Greece was celebrated for her justice. A Greek orator once said of Athens: "Mankind is indebted to her for the olive, the fig, and the administration of justice." It is not certain that the Greeks had any knowledge of legal medicine. The writings of Galen, Celsus, and others, contain no reference to the legal application of their knowledge. The writings of Hippocrates contain many facts of medicolegal interest, but no true record of their having been applied in courts of justice.

Hippocrates taught the possibility of superfetation, the viability of a child born before term, and the relative fatality of wounds. The Hippocratic oath, which every physician had to take before he could practice medicine in Greece, was as follows: "I will not administer or advise the use of poison or contribute to an abortion." (It would be well for the medical profession if some of our modern physicians would take the same oath.)

By reason of the teaching of Celsus, Galen, and other Greek physicians, medical science was greatly developed in Rome during her rise, but very little mention is made of its legal application. It was an ancient Roman custom to expose to public view the body of one who had met a violent death, in order that any one might express his opinion as to the cause of death, but the physician's opinion was not legally taken in such cases. There is, however, one record of a physician's opinion being officially recognized; that was in the case of the exposed dead body of Julius Cæsar. A physician testified that of all the wounds he had received, one only, that received in the chest, was mortal.

So mythical are the references to legal medicine in the empires of the ancient Persians, Medes, Babylonians, and other kindred people that we need not even make mention of them. For one thousand years subsequent to the time when Rome was in her glory, the development of both medicine and legal medicine suffered almost complete rest. The guilt or innocence of an accused person was left to his or her own confession under torture.

Until the middle of the 16th century medicolegal science was in a very chaotic state, but about that time there was a general awakening among both jurists and physicians as to the importance of the subject. Subsequent to that time four nations have given to the world practically all we know about medicolegal science. These are

Germany, France, England, and America. Spain, Russia, Japan, Sweden, Norway, Denmark, Portugal, Belgium, and Italy have contributed so little that they are hardly worthy of mention in this connection. One exception should be made to this, and that is Italy, in the person of Paulus Zachius, of whom I will speak later. Great big Russia has contributed the least.

It was in Germany that expert medical testimony was first legally recognized. In 1532 a code known as the Caroline Code, a criminal code, was formally proclaimed and adopted by the whole German empire. This code distinctly provided for utilizing the testimony of physicians in the courts. One of the provisions of the Caroline Code was as follows: "Wounds are to be examined by surgeons, who are to be used as expert witnesses, and in case of death by violence one or more surgeons are to examine the dead body before burial." Provision is made for the examination of women in cases of infanticide, and the examination of criminals as to their mental condition.

The earliest medicolegal work written was by a physician, Ambrose Pare. I personally take a little pride in the fact that the earliest medicolegal work written was by a physician. This work appeared in 1575. The most industrious and perhaps best known writer on legal medicine in France was Orfila. This noted French physician occupied the chair of chemistry and medical jurisprudence in the University of Paris for thirty years, and was employed as an expert medical witness in very many cases in the French courts.

One notable exception to the apathy of Italy, in the development of legal medicine, was Paulus Zachius, physician to Pope Innocent X. His great work was published about 1621. It treats of every branch of medicolegal science, and discusses questions of physiological legal interest.

In England no standard work on legal medicine was published until the early part of the 19th century, although physicians were employed in the English courts to witness to medical questions of fact long before this. Percival's "Medical Ethics" was the first published on medical jurisprudence (a rather queer title on a work of jurisprudence, but such it was). This was published in 1803. Subsequent to this several Englishmen wrote on forensic medicine. But the one who stands conspicuously in the forefront as a writer on medicolegal subjects, and in the development of this science is Dr. Alfred Swaine Taylor. He was born in 1806, and died in 1880, at the age of 74 years. In 1836 Dr. Taylor, then professor of medical jurisprudence in one of the leading colleges in London, published his "Elements of Jurisprudence." This was the best

known and most valuable work of the kind in the English language. With a little change of name it reached its twelfth edition in England and its eleventh edition in America. There are but few active practitioners of medicine in this country or England who have not some edition of this most valuable work in their libraries. During a period of forty years of untiring devotion to forensic medicine Dr. Taylor contributed many valuable papers to this subject. These are still read with much interest where they can be obtained.

In the United States the modern development of forensic medicine has kept well abreast with other English-speaking countries. In 1810 the celebrated Benj. Rush delivered a very able address on the subject in the University of Pennsylvania. I quote the following verbatim from this lecture which is destined to live in the annals of medicine as long as time shall last: "To animate you to apply yourselves to the study of all the subjects enumerated in the introduction to our lecture on medical jurisprudence, I beg you to recollect the extent of service you will thereby be enabled to render to individuals and to the public: fraud and violence may be detected and punished; unmerited infamy and death may be prevented; the widow and the orphan may be saved from ruin; virgin purity and innocence may be vindicated; conjugal harmony and happiness may be restored; unjust and oppressive demands upon the services of your fellow citizens may be obviated; and the sources of public misery in epidemic diseases may be removed by your testimony in courts of justice."

The College of Physicians and Surgeons, of New York, was the first in this country to establish a chair in medical jurisprudence. This was in 1813, and other colleges soon followed the example of that college. In 1815 Dr. Walter Channing was appointed to the same chair in Harvard University. In 1813 Dr. Theodore R. Beck, of Albany, N. Y., issued the first edition of a work on medicolegal science, which was considered the facile princeps of American works on legal medicine. It reached the twelfth edition in England, and was translated into the German and Swedish languages, an evidence of the appreciation of the work not only in this country but abroad. The importance given to medicolegal science in the United States is shown by the fact that almost every school of both law and medicine has a chair on medical jurisprudence or forensic medicine.

This epitome of the history of legal medicine is already too long for the scope of this paper, and yet the writer has not named, and could not even mention, physicians, especially in our own

country, who have contributed a very creditable part to medicolegal science.

Preliminary Examination.—Every medical expert when he first takes the witness stand has to qualify, that is, he must answer to the questions: When did you graduate? How long have you been in practice? What specialty or specialties have you studied? and other analogous questions. This is called the preliminary examination. The department of the expert witness in this examination is to him all-important. The old maxim, "What is well begun is half done," is especially applicable here. The impression made upon judge and jury will add to or take from the testimony-in-chief to a degree not usually appreciated by the expert physician. He should be particularly modest in the preliminary examination; he should not volunteer any information. I once heard a physician make repeated requests of the attorney of the side which had called him that when he was placed on the stand he wanted him (the attorney) to ask him particularly about his studies abroad, mentioning that he had been in Von Bergmann's, Kocher's, and other foreign clinics. The attorney gave him the opportunity to let judge and jury know what a great man he was, and he exhibited on the stand the same anxiety to let every one present know that he had studied in Europe, and before he had completed his testimony the other expert physicians present, and I presume judge and jury, wondered what he had been doing when he was abroad. His testimony was very much weakened by the bombast he had shown in the preliminary examination.

Testimony-in-Chief.—After the preliminary examination, if the expert has made a good impression upon court and jury, he will maintain this by not being too positive in every instance. Those who were present in the Koch trial will remember how a fabric-expert, testifying as to the material in different handkerchiefs, said with great positiveness that he could not be mistaken as to whether a certain handkerchief did or did not contain linen thread, and after testifying positively that handkerchief Exhibit 1, e. g., was all cotton and did not contain any linen, the handkerchiefs were shaken up and changed about, and the same handkerchief was handed back to him, without his knowing that it was the same, and he testified with equal positiveness that handkerchief No. 1 was part linen and part cotton. You can easily judge the weight of his testimony upon an intelligent jury, and the humiliation of the witness. I have seen medical experts who were too positive suffer a like humiliation. Yet, there are often questions put to the medical expert the answer to which can be made very positive and cannot be contradicted. Upon such points

the medical expert should be very positive for, e. g., if a stain on some garment is suspected as a blood stain, and the examiner has applied the recognized tests to determine the presence or absence of blood, he can swear most positively that the stain is or is not a blood stain, and this he should do and not say it might be something else. But if a man is thrown from a moving train and wrenches his back, and afterwards has a staggering gait, the expert cannot swear with positiveness that that man has received concussion of the spine. If he does so swear, he cannot maintain his position with other expert witnesses, for the fellow on the other side will swear with equal positiveness that the man has not received concussion of the spine. It is apparent, then, to both court and jury that the medical expert testimony is diametrically opposed. It is practically ruled out of the case, discredited is thrown upon our noble profession, and we are justly criticised. The expert in the above case can testify that the most probable result is concussion of the spine, and give his reasons for it, while the expert on the other side, if he is honest, will testify that concussion of the spine is a very possible result of the injury. In this case each expert will be given credit for his honest opinion, and his testimony will be carefully considered by the jury.

The medical expert should be dignified, impartial, and, above all, truthful in his testimony, and yet he would be considered over-officious were he to volunteer testimony damaging to the side for which he is testifying. The writer was once employed in a case of criminal abortion where death was evidently caused by an air embolism. The experts for the prosecution did not allege this as the real cause of death. The experts for the defense, while believing this was the cause of death, did not volunteer such testimony, but would have so testified had the attorney for the prosecution examined the experts for the defense on this particular point.

I think medical expert witnesses do not differ in their testimony as much as many attorneys believe they do. Opposing attorneys try to suppress all evidence damaging to their respective sides, and the physician is shut off from making clear his opinion by being compelled to answer yes or no when yes or no will not explain clearly his meaning. The writer is by no means willing to belittle medical expert evidence, or heap upon the medical expert witness the calumny which some attorneys and some physicians are wont to do.

THE MODERN THERAPY OF SYPHILIS*

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MINNEAPOLIS

The modern therapy of syphilis offers us a few new points on this broad and important subject, and it will be the endeavor of this paper to cover them briefly.

It seems fit to begin at the beginning and say a few words about the treatment of the initial lesion. If it is clean a little blue ointment is sufficient; if pus is present a mild bichlorid of mercury wash, 1-2000, followed by calomel powder, will answer all indications. With the appearance of the secondary symptoms the treatment of the syphilis proper begins. The old methods were the internal and the inunction. The internal method has many advocates in this country, but it has many objections. The mercury is absorbed from the intestine, goes to the liver, and is excreted from there, and again goes to the intestine forming a vicious circle. The stomach and bowels are irritated, and indigestion and diarrhea often result. Besides, the dosage is uncertain, the action slow, and the time of treatment is of necessity long-continued.

The inunction method is a very good one, but is contra-indicated in lichen pilaris and in skins very sensitive to mercury, while persons with a great amount of hair cannot rub themselves successfully. It also has the objections of uncleanliness and the uncertainty as to the real amount absorbed.

The modern method is the hypodermic method. Two kinds of salts of mercury are given, the soluble and the insoluble. Of the soluble salts the bichlorid (which is given where a rapid effect is desired, as in brain syphilis) and the succinimid are the best. They are given in one and two per cent solutions, the bichlorid being very painful, and the succinimid almost painless. They are rapidly absorbed and rapidly eliminated.

The chief of the insoluble salts is the salicylate, which is given in ten per cent solution in sterilized oil of paraffin. It is slowly absorbed and slowly eliminated forming reservoirs of mercury in the muscle, and it has a tendency to retard recurrences.

The method of injection is very simple. I prepare the skin with a solution of bichlorid, 1-1000, rubbing vigorously. The injection is made in the buttocks above Nelaton's line, alternating the sides. The syringe is of 1 cc. capacity, and the needle is of large caliber and pushes on instead of having a thread. It is one and one-half inches long. After shaking the mixture well,

the syringe is filled, and needle plunged straight into the muscle, and then the syringe is removed. A moment's wait will determine if we are in a vein, as bleeding occurs; if so, we withdraw the needle and plunge again; if not we insert the syringe in the needle and give the injection. A light massage over the site of the injection ends the operation. The reason for withdrawing the needle, if in a vein, is that there is some danger of a pulmonary embolus if the oil is injected into a vein.

The injections are best given twice weekly, using one-half cc. at a time and giving from 12 to 16 injections as a course. One cc. can be given once a week for six or eight weeks, but the smaller doses are better. While taking the injections the teeth should be carefully cleaned daily, and an antiseptic mouth-wash used often.

After this course a rest of six or eight weeks is taken, then another course of equal duration is given, followed by a rest of eight or ten weeks, and so on, giving courses regularly with longer and longer rests. This is kept up for three years, having the last year one long rest followed by the final course. The diet is unrestricted, tobacco and alcohol being forbidden.

The advantages of this method are that it is more scientific, accurate, and cleanly, relieves the skin and gastro-intestinal tract, has exactness of dosage, ease of administration, quickness and sureness of action, and, finally, keeps the patient under continual observation. Being an insoluble salt the salicylate can be given in large doses, has slight local reaction, and no abscesses are formed.

The mucous patch is treated with the silver stick or chromic acid, 2 per cent, or both. Patches on the tonsil are best treated with 20 per cent silver nitrate solution or 2 per cent solution chromic acid.

Condylomata lata require calomel powder locally. Gummata and periostitis require injections, and iodid of potassium internally with ungt. hydrarg. locally.

I may say that potassium iodid is still given in the rest periods by some men, but most agree that it has little value against the syphilis—none at all in fact. Its value is in the late lesions, the so-called results of syphilis.

The results of this method may be summed up in a few words: rapid and easy removal of symptoms, and a long period of freedom from disease.

*Read before the Minneapolis Medical Club.

SOME FEATURES OF OSTEOMYELITIS*

BY ALEXANDER R. COLVIN, M. D.

ST. PAUL

In order to present intelligently the special features of osteomyelitis herein referred to, it may be well to review, briefly, some of the general features of the disease, and the more recent work that has been done upon this subject.

Pyogenic inflammation of bone may result from infection in three different ways: First, by trauma; second, by extension from neighboring structures; third, through the circulation. The infectious agent may be any of the pyogenic microorganisms. The inflammation may affect one or all three of the osseous structures, namely, periosteum, medulla, or cortex.

I wish in this paper, to deal with osteomyelitis of hematogenous origin.

It has been established, both by experimental work and clinical observation, that this form of osteomyelitis originates usually in the medulla of the diaphysis and in the spongy part of the bone. In order to demonstrate the relationship between the blood supply and the most frequent situation of osteomyelitic foci, Lexer has furnished us with a most complete study of the blood supply of the different bones of the skeleton. He injected the vessels with a mixture of turpentine and mercury, and took radiographs of the bones thus injected. He differentiated by this means, in the long bones, three sets of vessels: (1) a diaphyseal or nutrient artery so called; (2) an epiphyseal; (3) a metaphyseal, the latter being the vessel supplying the spongy portion of the shaft bordering upon the epiphysis.

The nutrient artery, entering the nutrient canal, sends branches to both ends of the bone, which enter the spongy portion and run as far as the epiphyseal or intermediary cartilage. The supply of the spongy portion of the bone, is reinforced by the metaphyseal vessels entering from without, through the periosteum.

The epiphyseal arteries, entering also from without, are directed toward the bony nucleus of the epiphysis. They are directed as well toward the intermediary disc, as are also branches of the metaphyseal arteries. The older the bone the less well marked are all of these sets of vessels, but they are quite plain until the end of the growing period. After this time, the joint capsule represents the most vascular part of the structures forming the joint. This fact probably explains why in hematogenous infections in later life, we are more apt to meet joint suppuration,

while in early life, the regions on either side of the intermediary disc are the most vulnerable; these latter regions corresponding to the areas supplied by the terminal twigs of the various arteries described.

If the microorganisms lodge in the branches of the nutrient artery, we may have an acute phlegmon of the shaft. The acute phlegmonous process in the medulla may cease at the epiphyseal line. Infection beginning in the spongy portion may spread in various directions. It may, first, extend to the medulla, causing a medullary phlegmon; second, spread along the epiphyseal line, bringing about a separation of the epiphysis; third, travel by means of the vascular canals through the epiphyseal line into the epiphysis, causing epiphysitis; fourth, break through the epiphysis into the joint; fifth, spread along the epiphyseal cartilage, and break through the periosteum, either into the joint capsule, or extra capsularly, depending upon the attachment of the capsule in the individual joints.

The value clinically of a knowledge of the possibilities of the course of infection, cannot be over-estimated. An early surgical interference, guided by this knowledge, may thus save either a joint or an entire shaft, or prevent destruction of the cortex, with consequent sequestrum-formation and all its attending dangers.

Although these localized forms of osteomyelitis are quite familiar, a renewed interest in them is excited by the fact that they can be definitely located by the radiograph.

It so happens that a case of multiple osteomyelitis which came under my observation, can be used to demonstrate several of these pathological processes, and, further, to demonstrate the value of the radiograph in their localization, the possibilities of surgical interference, and the power of repair and regeneration possessed by bone in the young.

The patient, a girl six years of age, on December 25, 1905, became suddenly ill with fever, and several swollen joints, simulating, at first, articular rheumatism. Her physician, however, soon detected pus collection in the neighborhood of the right wrist and left knee-joints, and liberated it by incision. When seen on February 12, 1905, the left knee and thigh were much swollen, with a discharging sinus on the outer side of the thigh. The region of the left elbow was swollen, and the joint was held by muscular spasm, at about a right angle, slight movement being pos-

*Read before the Minnesota Academy of Medicine, November 7, 1906, and by title before the Minnesota State Medical Association June 21, 1906.

sible. The right forearm was swollen just above the wrist-joint, and there was a discharging sinus, just above the styloid process of the ulna. The right arm was slightly swollen about three inches below the shoulder-joint on the outer side. The right side of the face over the lower jaw was swollen and tender. The general condition of the child was very bad indeed. She, however, steadily improved. The parents refused to allow any operative interference, and I was thus enabled to make some radiographic observations, extending over a considerable period of time. The radiograph of the femur, taken in April, 1905, about three months after the onset of the trouble, shows areas of destruction in the spongy tissue of the lower end of the bone. The epiphysis does not show any change. The periosteum over the lower two-thirds of the shaft is thickened. The radiograph of the right ulna shows the shaft partially melted away in places, and surrounded, from one end to the other, by a much thickened periosteum, evidently forming new bone.

Although I have not a radiograph showing an early stage of the process in the ulna, clinically, one was able to watch the gradual extension of the inflammatory process from the lower end of the ulna, along its surface, up to the elbow-joint.

The radiograph of the left elbow, taken June 17, 1906, shows an area of destruction of the lower end of the humerus in the neighborhood of the olecranon fossa, and a separation of the periosteum just over the external condyle. An incision over the external condyle and through the periosteum, disclosed a small quantity of granulation tissue, separating the periosteum from the bone. Cultures taken from the granulation-tissue produced the staphylococcus, aureus and albus.

The small focus of disease in the shaft of the right humerus, referred to above, proved to have started in the medulla, and had destroyed a very limited area of the cortex. Cultures taken from this focus produced the same organism.

We have, then, in this case multiple osteomyelitis, beginning acutely with the process exhibiting very variable degrees of virulence in the different regions referred to, in the femur, ulna, and jaw, rapidly extending to the periosteum, breaking through, and infiltrating the soft parts. In the right humerus, at the end of seven months, nothing but granulation was found. In the left humerus, the granulation tissue had not even broken through the periosteum. The incision made to remove the subperiosteal granulation-tissue healed almost per primam. It showed no indication of breaking down until March, 1906, when a radiograph disclosed the fact that the process which had begun in the region of the

olecranon fossa, had extended through the intermediary cartilage and invaded the bony nucleus of the epiphysis for the capitellum. On exposing this focus, a small amount of pus was obtained, some of which evidently came from the joint.

Radiographs were taken of the various diseased bones at intervals during a period of about fifteen months, and the following facts demonstrated: That of the femur, which had never been subjected to any operative interference, shows a regeneration of structure approximating very nearly that of the normal bone, the difference being, that the individual trabeculae are somewhat heavier looking; the epiphysis is entirely normal in appearance, and the intermediary cartilage is quite regular; the periosteal thickening has entirely disappeared.

One may fairly conclude that the epiphysis had never been invaded, for, if it had, the regenerated trabeculae would show the same increased density as the spongy structure of the shaft.

Coming now to the ulna, we have radiographs showing the almost complete melting away of the old shaft, a small sequestrum, about half an inch long and a quarter of an inch wide, being all that remained of that structure. A new shaft has been formed from the periosteum. Operation undertaken fifteen months after the onset of the trouble, exposed the remnant of the shaft referred to. There was, however, an irregular cavity extending the whole length of the new shaft, which was filled with granulation-tissue. There were also several quite small cavities in the thickened upper part of the newly formed shaft which contained granulation tissue and a small quantity of pus. One of these cavities extended quite to the joint capsule. The latter being punctured quite a quantity of turbid fluid escaped.

The tardy surgical interference in this case was due to difficulty in obtaining the consent of the parents, and, although the result has been good, much time would have been saved by earlier operation.

Prolonged observation, supported by radiographic study, has here demonstrated, first, the power of regeneration in the bones of the young; and, secondly, the comparative similarity of the young bones to the softer tissues, considered from the point of view of their reaction to inflammatory processes, this being due of course to the softness of the bones and a much greater vascularity of the cortex. Early incision and drainage will therefore, in a great many instances, be all that is necessary, especially when the disease is located in the spongy end of the bone.

Cases of this kind would seem to support the position of Lexer, that the multiple acute osteomyelitis is a pyogenic, metastasising general infection of youth, characterized by the special susceptibility of the bone-marrow for metastasising inflammation. It cannot always be known just where the infection enters, but it is a fact that many of the clinically comparatively harmless infections are attended by the presence of microorganisms in the circulating blood.

Wasserman and others have shown that the bone-marrow is one of the tissues where these microorganisms are deposited for destruction, this being brought about by bactericidal material derived from the leucocytes, so abundant here.

The study of the radiographs of the ulna in this case, showing the destruction and the reformation of the shaft, led me to compare them with radiographs of two adult fibulae, where the same process had evidently gone on during a period of fifteen years, the patients during these years suffering repeated attacks of inflammatory trouble and great pain.

Several sinuses were present, leading to openings in the bone. A definite sequestrum was not present. The entire shaft was irregularly thickened. The bone being eburnated, a medullary cavity was not demonstrable. There was, however, a series of cavities of various sizes, extending from one end to the other of the bone containing granulation-tissue. The radiograph shows these cavities as areas which have per-

mitted greater penetration of the bone by the x-rays.

These cavities correspond I think, to the cavities shown more clearly in the ulna above alluded to, and represent areas, which have during the process of bone formation become surrounded by new bone, the virulence of the microorganisms in the enclosed granulation tissue, has become lessened, and the inflammatory trouble becomes for a time quiescent. This quiescent form of bone trouble is of course quite common. For some reason, however, the inflammatory condition becomes again active, and an almost endless chain of events is the result of allowing these cavities to become closed-in by the eburnated bone. I believe that, if we had been satisfied, in the case of the ulna with simply removing the sequestrum, the same condition pictured in the fibula would have resulted. It is, then, necessary to clean out the entire chain of cavities extending from one end of the shaft to the other. Fortunately, bone-production is, in these cases, in excess of the necessary amount required for function, and we can fearlessly remove, as I did in the ulna and the fibula, almost one-half of the bone, to obliterate the cavities when necessary, without impairing the usefulness of the new shaft. By this means we also leave a comparatively even surface upon which the soft parts can fall, thus doing away with the necessity for prolonged dressing of bone-cavities, or the use of various substances in vogue, for filling these cavities.

(See illustrations.)

PHYSIOLOGIC CHEMISTRY

CONDUCTED BY

RICHARD OLDING BEARD, M. D.

Professor of Physiology, University of Minnesota

ASSISTED BY

J. P. SEDGWICK, B. S., M. D.

Instructor in Physiologic Chemistry, University of Minnesota

The conductors of this department will welcome inquiries or suggestions upon topics of current interest and will publish, in abstract, suitable contributions within its special field. Limits of space will require the selection of material for publication.

They propose the inclusion in this department of problems in the physiologic chemistry of the human body and in the physiologic chemistry and hygiene of human foods.

THE PURE FOOD LAW

The United States Department of Agriculture

has just issued a series of "Rules and Regulations for the Enforcement of the Food and Drugs Act."

These are preliminary and are to be followed by more specific instructions to the public upon some of the more technical provisions of the law. They cover points of interest to the medical profession in this attempt at pure food legislation.

The provisions of the law may be said to cover four points: (1) the misrepresentation of food values; (2) the deterioration of food quality;

ILLUSTRATING DR. COLVIN'S PAPER

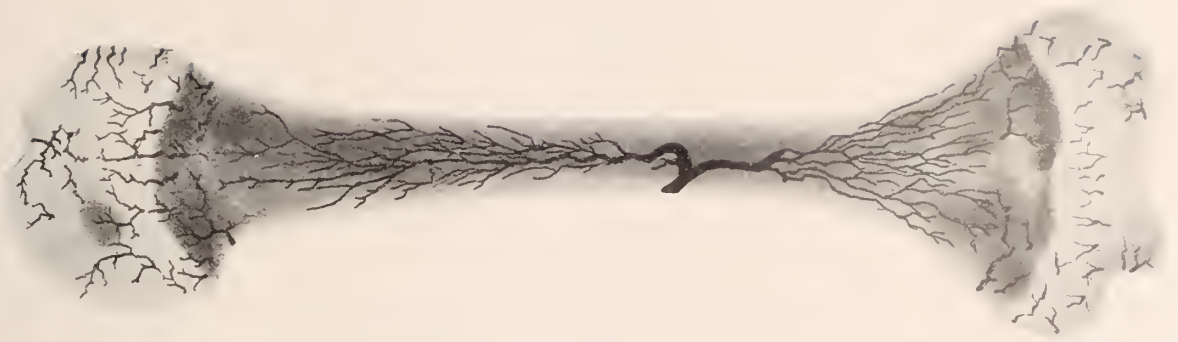


Fig. 1. Shows blood supply of humerus. (From Lexer.)

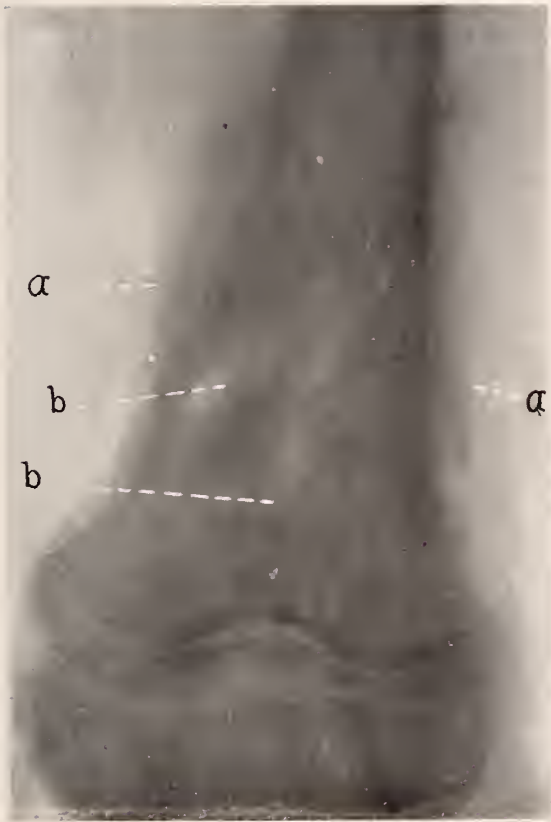


Fig. 2. Femur, showing (a) periosteal thickening; (b) areas of destruction in the spongy bone of the lower end.



Fig. 3. Femur. The same bone as in Fig. 2, one year later.



Fig. 4. Lower end of humerus, showing (a) periosteum lifted away from the bone by granulation tissue; (b) destruction of spongy bone in the region of the olecranon fossa. Radiograph taken ten months after the onset of the trouble



Fig. 5. Lower end of the normal humerus (same patient.)

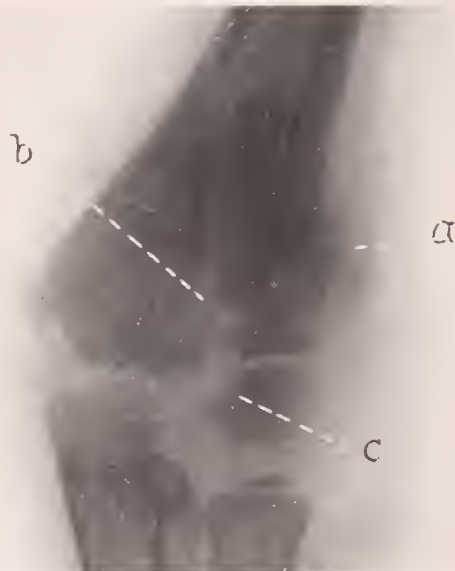


Fig. 6. Lower end of the humerus, taken four months later than Fig. 4, showing (a) periosteal exudate; (b) some new bone formation in the region of the olecranon fossa; (c) small area of destruction in epiphysis. Radiograph taken one year after the onset of the disease.

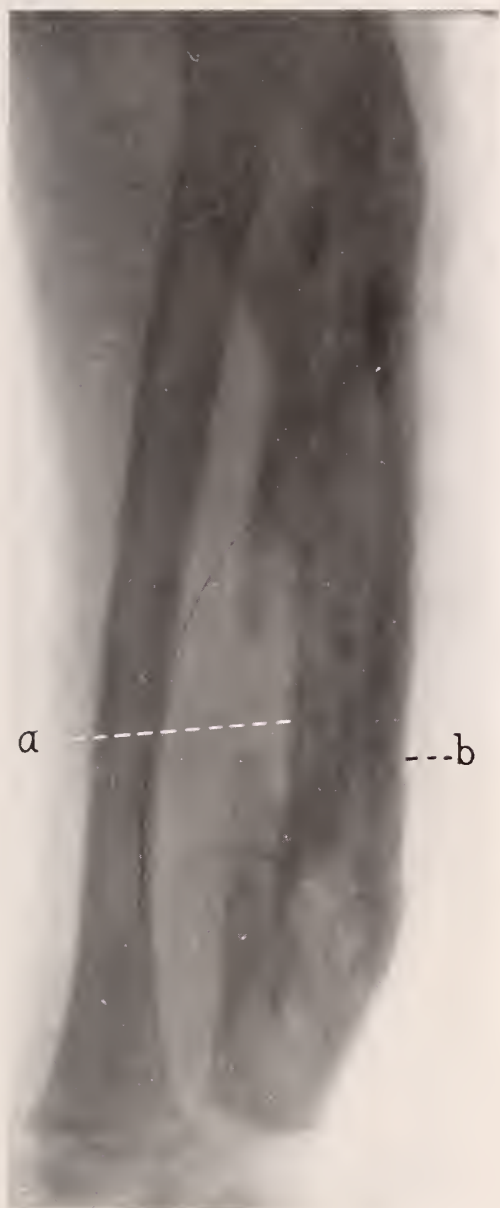


Fig. 7. Ulna, showing (a) old shaft partially destroyed, surrounded by (b) new bone formed by periosteum. Radiograph taken two months after the onset of the trouble.



Fig. 8. Ulna, taken seven months later than Fig. 7, showing (a) part of the old shaft.



Fig. 9. Ulna, taken one year later than Fig. 7. The small sequestrum (old shaft) is still seen at (a), lighter areas (b) in the center of the new shaft, and in the olecranon process, indicating cavities filled with granulation tissue, where the old shaft has been entirely destroyed.

Fig. 10. Fibula. Osteomyelitis of fifteen years' standing. The lighter areas (a) are the cavities filled with granulation tissue.

(3) the adulteration of food-stuffs; and (4) the use of food preservatives.

Under the first of these heads the law calls for an honest label and a distinctive name attached to food preparations. Such distinctive name shall not represent merely a single ingredient, shall not "misrepresent any property or quality," and "shall give no false indication of origin, character, or place of manufacture." Description of properties and qualities is not compulsory, provided these are not of an injurious nature, but if description is given it must conform to the facts.

Substitution is forbidden under any misleading name or label. The name and character of any substitute employed must be stated.

The deterioration of foods is specifically dealt with. The lowering of strength, quality, or nutritive value by the introduction of any foreign materials, harmless or otherwise, is prohibited.

The use of refuse, trimmings, waste pieces, etc., in the preparation of foods, is permitted only under labels declaring its salvage quality.

Under several provisions the vicious practice of using, and concealing the use, of food materials of a filthy, decomposed, or damaged character is covered. Inspection of raw materials so prejudiced is provided for. Mixing, coloring, staining, etc., of food-stuffs, for the purpose of hiding such deterioration, is expressly condemned. The most dangerous consequence of the use of preservatives in foods is thus incidentally attacked. The concealment of filth or putrescence by this means had been a very common practice among unscrupulous dealers.

With reference to the use of adulterants and preservatives, the Act is sufficiently explicit to cover all forms of offense, but in the interpretation of those clauses of the law which are addressed to these mischiefs, the Department withholds as yet any very positive statements. These subjects are under investigation, for which the law provides, and very wisely the Department postpones conclusions until the premises of action are well established. Meanwhile it has issued, within the past few weeks, circulars of inquiry, addressed to the principal laboratories of physiology and chemistry throughout the country, asking for the judgment of the directors of these laboratories upon the fact and the degree of harmfulness of the adulterations and the preservatives in common use. In a word, the Department proposes to have the scientific opinion of the country back of its enforcement of the law at crucial points.

Unqualifiedly, it forbids the use of mineral substances, whether poisonous or otherwise, in the manufacture of confectionery.

It requires that the use of coloring matters

shall be confined to those which are of a harmless nature, while it does not undertake, as yet, to specify harmful forms.

It expressly permits the external application to food-stuffs of preservatives, even those that may be, in themselves, deleterious to health; provided they are in such form as to preclude their permeation of the mass to which they are applied and provided that their removal, prior to use, is possible and that the directions for such removal are attached to the package or wrapper in which the food is contained.

It may be expected that a specific statement of the adulterants and preservatives which come under the final condemnation of the Department will appear in the course of time.

A great opportunity will be presented to physiologic chemists throughout the country to assist in the interpretation and enforcement of the pure food law and to influence the enactment of sympathetic measures within the several states.

BEARD.

MAKING PROTEIDS IN A TEST-TUBE

It has long been known that in the breaking down of proteids by the pancreatic digestion certain amido-acids, such as leucin and tyrosin, are among the products formed. The later work of Zunz, Lawrow, Pfaundler, and Langstein has shown that the peptic digestion as well, when long continued, is capable of breaking the peptones down to the amido-acids.

If digestion breaks down the proteids to amido-acids it is rational to suppose that the amido-acids enter into the make-up of the proteids. If a piece of liver is kept for some time under aseptic conditions at the proper temperature, a ferment which is contained in the liver itself will break the liver proteids down with the formation, among other products, of leucin. This process is known as autolysis, and is common to many tissues. Fredrich Mueller has greatly advanced our knowledge of the resolution in pneumonia by showing that the process is essentially an autolysis.

With these facts for a foundation, Emil Fischer set himself to work to devise a chemical method whereby these amido-acids could be formed from the proteids in the laboratory. This method is called the ester method, and consists, essentially, in boiling the proteids for some time in HCl, or H₂SO₄ (hydrolysing). The mixture of free amido-acids thus obtained is then treated in alcoholic solution with HCl gas, thus forming the ethyl salts or esters of the acids. These ethereal salts can then be distilled off at different temperatures, and the various amido-acids thus obtained for further examination.

As a crowning proof of the correctness of the

idea that the proteids are made up of amido-acids, the master, Emil Fischer, has recently been able to build up peptone-like substances synthetically. He was first able to make serin (oxyamidopropionic acid), a body that is found in nearly all proteid compounds, by allowing ammonia and hydrocyanic acids to act upon glycolaldehyde $\text{CH}_2\text{OH}\cdot\text{COH}$. The synthesis of leucin, alpha pyrrolidincarbonic acid, ornithin and lysin soon followed.

These amido-acids furnished the timbers for the future construction of proteid-like bodies. Earlier analysis of proteids had shown the possibility of breaking these complex compounds up into the simpler amido-acids. Why not reverse the procedure? Fischer soon discovered a method of coupling these amido-acids together. He named these new compounds peptids, di, tri, tetra, or polypeptids, depending on the number of constituent amido-acids.

Fischer formed so many new compounds after this manner that he himself laughingly remarked that, "their own father would hardly know them all." He succeeded in uniting several mono or di-amido-acids together into a polypeptid that one might term a heptapeptid.

Fischer does not hesitate to answer the questions, as to whether these polypeptids are proteid-like bodies, in the affirmative. The similarity of the peptids to the peptones is very striking. They are readily soluble in water, foam when boiled, taste better, give the typical rose color biuret reaction, and may be precipitated in acid solution by phosphotungstic acid. Still more important, however, is their behavior towards ferments. The pancreatic ferment has the same effect upon them as upon other proteids. This leaves no doubt as to their proteid character. Now that the way has been pointed out, the synthesis of proteids is being vigorously pushed. SEDGWICK.

THE DIGESTION OF FATS IN THE STOMACH

While unsound conclusions are usually formed upon insufficient premises, a correct scientific conclusion is often imperilled by the inadequacy of the foundation upon which it rests. Denial displaces the insecure truth and progress is postponed. The history of the study of fat digestion in the stomach illustrates this result. In 1858 Marcet found fatty acids in the stomach and attributed their presence to the splitting of neutral fats. From that time to 1900, physiologic belief and disbelief alternated with each other and with the general prevalence of disbelief upon this point. Then Volhard broadened the basis of the discovery by his proof of the agency of a gastric ferment in the fat-splitting process and of the necessity for a prior emulsification of the fat. His work was done mainly with the gastric juice of adults.

Later, my colleague, Dr. J. P. Sedgwick, took up the investigation upon infant subjects and young animals, in the laboratory of the Heubner clinic at Berlin. In his experiments the yolk-fat of the egg was digested with gastric juice and the proportion of fats split in the process was accurately determined. In twenty-four hours' digestion, the percentage ranged from 9.2 per cent to 24 per cent. Control experiments were run with boiled gastric juice and fat and with fat alone.

The stomach-contents of rabbits showed, also within a few hours of birth, a fat-splitting power from 18.6 per cent to 21.8 per cent of the total fat. Glycerin extracts of the gastric mucosa gave fatty acid, with egg yolk solutions in from 9.5 per cent to 19 per cent of the fat treated.

The ferment derived from the stomach of a ten days' old child was as active as that from older infants. Infantile stomach contents, analyzed immediately upon removal, showed from 2.9 per cent to 10.6 per cent of the fat present in the form of fatty acids. Such quantitative results as these take no account of a possible absorption of fatty acids from the stomach before removal; a possibility, however, which has not been established. Good evidence seems to be afforded that the intestinal mucosa absorbs fatty acids and a re-synthesis of fat in the process of absorption is suggested.

Dr. Sedgwick has shown that the fatty acids split off by the gastric juice are mostly the higher members of the series.

In April, 1906, Heidensheimer reported to the Verein für Innere Medizin, in Berlin, some interesting experiments, confirming the results of Volhard upon adults. He proved that the ferment was not derived from the pancreas via the duodenum. While he had done little work in this field with children, he referred to the conclusive quality of Dr. Sedgwick's work. He had found a gastric fat-splitting ferment in a dog.

In discussion of this report, Langstein spoke in confirmation of the work done by Sedgwick in the Berlin Children's Clinic and referred to the priority of his demonstrations upon animals.

Boas expressed his belief that the fat-splitting in the stomach was not due to a regurgitation of bile or pancreatic juice from the duodenum but was attributable to a true gastric ferment.

As the first practical suggestion growing out of this discovery, Ibrahim, of Heidelberg, suggested at a meeting of the German Society of Pediatrics in September last, that in view of this formation of fatty acids in the stomach, fat-free milk may well be given in spasmus pylori, because of the well known influence of acid upon pyloric closure. BEARD

the fact that he spoke so frankly of the failures of the surgeon, and in his paper he did not spare himself. His aim was to emphasize the virtues of the diagnostician, and to urge upon his listeners the needs of careful and painstaking investigation and the importance, first of all, of making a correct diagnosis. The surgeon has a great advantage over the internalist; he can make an exploratory operation and complete his diagnosis by methods beyond the reach of the medical man. The great surgeon should be an internalist, in order to occupy a high plane among his professional brethren. When he can arrive at a diagnosis before he operates, then he becomes a representative among medical men. Evidently Dr. Richardson has attained a position of great prominence by his earnest endeavors to seek and find the truth in surgery, and thus to apply the remedy.

Dr. Richardson was entertained at a dinner at the Minnesota Club, in St. Paul, by Dr. Burnside Foster and others, and at a luncheon at the Minneapolis Club by Dr. J. E. Moore.

THE COUNTY BOARD OF HEALTH

The secretary of the Minnesota State Board of Health has sent a copy of the letters which follow to every county auditor, chairman of the county commissioners, and to many of the presidents and secretaries of county and district medical societies in Minnesota, in order that county boards of health may be established in every section of the state. The new code provides that each county board of health shall include a physician. Heretofore in many counties it was difficult, and sometimes impossible, to secure a physician who would act as health officer on account of the necessity of quarantining communicable diseases and thus offending some of his families or those of his brother practitioners. Now it is obligatory, and the physician must serve his county, although it be a disagreeable duty. The right kind of a man, one who is respected in the community and who is fearless in the discharge of his duty, will in no way cause offense. The standard of the county boards will be elevated by the advice and assistance of a medical man. In the outlying counties where physicians are not obtainable, a physician from the nearest point may be a member of the board.

There is now no reason why there should not be an efficient board of health in every portion of the state. The physician member of the board will add weight to opinions, orders,

or commands that are occasionally necessary in the enforcement of the laws of public health, and our cities, towns, or villages will be better protected from unsanitary and disagreeable nuisances.

TO THE COUNTY AUDITOR AND TO THE CHAIRMAN OF THE BOARD OF COUNTY COMMISSIONERS:

You are probably familiar with the fact that the revised laws of Minnesota (1905) provide for a County Board of Health. The law states that such board shall consist of a physician and two members of the Board of County Commissioners (Sec. 2134). The new regulations of the Minnesota State Board of Health (copy enclosed) outline the duties of County Health Officers. It is therefore necessary for every county to have a Board of Health. I trust your board will take great pains, in selecting a man, to secure a physician in every way competent to assume the responsibilities of a County Health Officer.

A County Board of Health may be of great assistance to the State Board of Health in advising local boards of health, especially in country districts, as to how they should proceed in dealing with sanitary problems. A County Board of Health may be of great service in auditing bills for the care and control of contagious diseases, thus aiding the county financially. The board should be a source of economy to the county. Its members, however, should receive pay for actual services rendered.

I trust your board will proceed at once to comply with the law in the appointment of a County Board of Health.

Awaiting notification of the action of your board, I am
Very truly,

H. M. BRACKEN

TO THE PRESIDENT AND SECRETARY OF DISTRICT AND COUNTY MEDICAL SOCIETIES:

Enclosed find the copy of a letter that has been sent to each County Auditor and each Chairman of Boards of County Commissioners in Minnesota, relative to the appointment of a County Board of Health. I trust the medical men in your county will take an interest in this matter. It is very important that we should have thoroughly organized and active county boards of health with medical men of good standing as county health officers. I wish to call a meeting of county health officers late in January or early in February of 1907.

Will you not bring this matter before your county or district medical society at once in order that such organization may use its influence in securing proper men as county health officers? If there is no meeting of your society soon, please take the matter up personally or through a committee at once, before the County Commissioners take action.

Very truly,

H. M. BRACKEN

Note.—THE JOURNAL-LANCET is the official organ of the Minnesota State Board of Health, and will publish such matter as pertains to the public health.

For certain publications, such as the state laws and the rules adopted by the Board, THE JOURNAL-LANCET receives about the cost price of publication. For communications like the above no charge is made.

The regular papers of the State Medical Society and such other matter as is regularly published will not be put aside for regular matter of the Board of Health.—THE EDITOR.

CORRESPONDENCE

THE DRUGS ACT

TO THE EDITOR: The provisions of the Pure Food and Drugs Act which apply to food materials are discussed in the department of physiologic chemistry of this issue. The medical profession is interested, also, in those which apply to drugs.

It is a matter for regret that the law is not mandatory as to the branding, as well as the misbranding, of all medicinal preparations. For the certain measure of relief which it affords, the profession will give much thanks, while it will wish that the patent medicine lobby had been less successful in protecting its secret interests.

The law, in fact, controls recognized preparations more efficiently than it does unrecognized agents. It requires that simple drugs not bearing a distinctive name shall be known by their pharmacopeial names. These shall be of official quality and strength, or, failing this, the degree of departure therefrom shall be announced by label.

It does not compel the publication of the formula of patent medicines, but it attacks this class of drugs at two points,—points at which, if the law be enforced, they must necessarily suffer. It demands that there be printed conspicuously upon the label of these preparations the name and the true percentage of any stimulant or narcotic or other dangerous ingredient that they may contain. It leaves no room for cavil, as to the drugs included under these designations, by naming them specifically. The list includes ethyl alcohol, opium, morphine, cocaine, heroin, eucaine, chloroform, cannabis indica, chloral hydrate, and the coal-tar preparations, together with the derivatives of each.

It forbids the labelling or enclosure with any medicinal agent or compound, of any design, device, or statement which shall be false or misleading in any particular as to the nature of the substances contained therein. Such falsity or misrepresentation is not to be condoned by

the authority of any expert opinion upon which it is based.

These two important provisions of the law forge weapons which ought to be adequate to destroy much of the mischief which springs from the exploitation of patent medicines. Misrepresentation by the maker and habit in the user have been the mainstays of this pernicious business.

Incidentally, the more complete standardization of drugs will be favored by the requirements of the law.

RICHARD OLDING BEARD.

UNUSUALLY LOW TEMPERATURE

Racine, Minn., Nov. 14, 1906.

TO THE EDITOR: I had a remarkable case of low temperature following an attack of lobar pneumonia, which I thought might be of interest to the profession.

Mrs. B., aged 62, a robust farmer's wife, had a moderately severe case of lobar pneumonia, the upper lobe of the right lung being affected. The temperature ran from 100 degrees to 102.3 degrees up to the ninth day, when it rose to 103.2 degrees. That night she was taken with severe vomiting, and the morning of the tenth day I found her in a state of collapse with a temperature of 94.3. In the afternoon it rose to 95.2. The next morning, that is, the morning of the eleventh day, it was 97.2. The morning of the twelfth day it was 99.3. After that it returned to normal, and she has made an uneventful recovery.

These low temperatures were each taken three times, twice by the mouth and once in the axilla, and after the first time I used two thermometers.

I simply mention this case as I had been led to believe a temperature below 96 degrees meant to send for the undertaker.

Respectfully,

E. E. BENEDICT, M. D.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular meeting of the Academy was held at the Minnesota Club on Wednesday evening, November 7th. Dinner was served at 7 o'clock, and the meeting was called to order in the library at 8:20. There were twenty-seven members present. The president-elect, Dr. Richard O. Beard, of Minneapolis, was in the chair.

The minutes were read and approved. Special attention was called to the invitation extended by the Ramsey County Medical Society to attend the meeting November 19th to meet Dr. Maurice Richardson, of Boston.

The president delivered his inaugural address, entitled "The Relation of Physiologic Chemistry and Physiologic Microscopy to Medical Practice."

Dr. A. R. Colvin read a paper, entitled, "Some Features of Osteomyelitis." The paper was illustrated by illuminated skiagraphs. The subject was discussed at length by Drs. Dennis, Rees, H. P. Ritchie, Ramsey, A. MacLaren, Gillette, Williams, and by Dr. Colvin, in closing. (See page 512.)

A. W. DUNNING, M. D.
Secretary.

HENNEPIN COUNTY SOCIETY

A regular meeting of the Hennepin County Medical Society was held in the library rooms November 5, 1906, Dr. F. C. Todd, the president, being in the chair, and fifty-five others present.

The minutes of the previous meetings (Oct. 1st and 15th) were read and approved.

The Censors reported favorably on the names of Drs. S. Rosen and R. H. Mullin, who, on vote by ballot, were duly elected to membership. Drs. Ivan Sivertson and H. H. Slocumb were duly nominated to membership.

Dr. J. H. Stuart read the following memorial to Dr. Columbus G. Slagle:

DR. COLUMBUS G. SLAGLE

Dr. Columbus G. Slagle was born at Zanesville, Ohio, June 12, 1834, and died August 27, 1906, aged 72 years and 2 months. His father's family moved to Chillicothe, Mo., when he was about 5 years of age, and his mother died a few months later. His father died in 1903. He received his education in the schools near his home in Missouri. His health as a young man not being very good, he spent two years touring through Texas and Louisiana, mule-back, teaching school at intervals during that time.

Having chosen the profession of medicine, he attended one course of lectures at the Jefferson Medical College, Philadelphia, and finished his course at the Medical Department of the University of Louisville, Ky., from which he received his diploma in 1861.

After a few years spent elsewhere, partly in Iowa, I think, he came to Winnebago, in this state, where he resided until his death.

He was married at London, Ohio, to Emma Louise Sprong, who died in 1891. There were born to them four children, of whom one, if not two, survive him.

Dr. Slagle was truly fond of his profession, and endeavored at all times to guard and cherish its welfare and to keep himself acquainted with its progress, especially in that department to which he more particularly applied himself. For a period of twelve years he lectured before students of the Medical De-

partment of Hamline University, on the diseases peculiar to childhood.

He made a number of contributions to medical journals, and read papers before medical societies. Twice he appeared with papers before the American Medical Association.

Dr. Slagle was never a robust man, and he suffered much in his later years from attacks of rheumatism, which eventually disqualified him almost entirely for work outside his office, finally causing his death. He was a member of the M. E. Church and had been a Mason many years. He possessed a genial, kind, frank nature that drew him friends and a fair share of professional business, which he conscientiously and faithfully cared for. These fine traits in Dr. Slagle's character, combined with a generous, compassionate nature, disqualified him in a measure, as is often the case in our profession, from reaping the full benefits of his labors, by making proper charges and prompt collections in anticipation of the time when the ability to labor is gone.

Dr. Slagle was a good man. It is testified of him that he lived a consistent, exemplary, Christian life, characterized by kindness, gentleness, and charity.

He was patient and cheerful in suffering, hopeful in adversity, without hatred or malice. In his honored profession he discharged his duties to the best of his ability, as one who feels the weight of his responsibility.

A close friend of his writes as follows:

"Dr. Slagle enjoyed the society of friends and books. He lived in an atmosphere above the petty annoyances of life, and although friends at times deserted him and financial reverses came, he was always the same courteous, kindly, affable man."

J. H. STUART, M. D.

The scientific program being in order, Dr. W. S. Porteous read a paper, entitled, "An Alleged Neoplasm." The discussion was opened by Dr. W. R. Murray, the others taking part in it were, Drs. Watson, Slocumb, Strout, Bishop, and Todd, the discussion being closed by Dr. Porteous.

Dr. A. E. Benjamin read a paper entitled, "Extra-uterine Pregnancy." The discussion was opened by Dr. Abbott, followed by Drs. Nippert, Barton, Phillips, Law, Aurand, and Dunsmoor, the discussion being closed by Dr. Benjamin.

At the request of the essayist Dr. Hamilton's paper was postponed.

An invitation to attend the meeting of the Ramsey County Medical Society to be held Monday, November 19, was accepted.

C. H. BRADLEY, M. D., Secretary.

NEWS ITEMS

Dr. Frank Dumont has located in Mankato.

Dr. W. A. Kiefer has begun practice at Sleepy Eye.

Dr. A. W. Thomas, of Montreal, has located at Overly, N. D.

Dr. L. S. Moore, of Chicago, has located at Elk Point, S. D.

Dr. A. A. Dodge, of Faribault, has moved to Great Falls, Mont.

Dr. Andrew Klovstad is doing post-graduate work in Chicago.

Dr. John J. Whyte, of Bertha, will soon move to Wauconia, Iowa.

Dr. M. J. Hart, of LeRoy, has gone to Chicago for post-graduate work.

Dr. L. B. Prouty has moved from Wentworth, S. D., to Corona, S. D.

Dr. Per Oyen, of Colfax, N. D., will move to Fessenden, in the same state.

The city of Regina, Sasks., Canada, is talking of a new hospital to cost \$100,000.

Drs. MacKenzie and Mardsen, of Carrington, N. D., have dissolved partnership.

Dr. W. E. Kiteley, of Fairmont, N. D., has been doing post-graduate work in Chicago.

Dr. G. F. Walter, a late graduate of the State University, has located at Sharon, N. D.

Dr. G. C. Hanson, who has been practicing for one year at Climax, has moved to Knox, N. D.

Dr. Ira Barton, of Sandborn, N. D., was married last month to Mrs. Sarah E. Witts, of Butler, Ill.

Dr. J. A. Regner has moved from Evansville to Minneapolis, and has offices at 2224 Central Avenue.

Dr. Will Harrington, formerly of Owatonna, has purchased the practice of Dr. Carl Haish, of Watertown, S. D.

Dr. Herbert W. Old died in Minneapolis last month. Dr. Old graduated from the State University in the class of 1903.

Dr. C. W. Doran, a 1901 Hamline graduate, who formerly practiced at Montgomery, is farming on a big scale at Saskatoon, Canada.

Dr. H. G. Parker, of Madison Lake, has sold his practice to Dr. C. E. Bigelow, of Dodge Center, and will move to Portland, Oregon.

Dr. H. G. Parker, of Madison Lake, has sold his practice to Dr. C. E. Bigelow, of Dodge Center. Dr. Parker will move to Portland, Oregon.

Dr. George C. Hanson, who recently moved from Climax to Knox, N. D., has joined with Dr. C. V. B. Poole, of that place, and opened a hospital.

Miss Eva Johnson, a nurse in the hospital

at Dickinson, N. D., has been tendered a position in the hospital of Bridger, Mont., and will accept.

Dr. W. A. Chamberlin, of Waseca, is spending two months in New York and Philadelphia in post-graduate work, mainly in obstetrics and internal medicine.

The Immanuel Hospital of Mankato was dedicated last month with very elaborate ceremonies. It was built by the Lutheran church at a cost of \$35,000.

Dr. George B. Moore, a Hamline graduate, class 1901, died last month in St. Paul, at the age of 35. Dr. Moore had been police surgeon in St. Paul since 1903.

Dr. Anders Westeen, of Grand Forks, N. D., goes to Europe this month with his family for a year's special study. He will return to Grand Forks in October of next year.

Dr. F. A. Kiehle, State University, 1901, who was formerly practicing at West Jordan, Utah, has gone to Europe for a year's study of eye, ear, nose, and throat in London.

Dr. E. P. Quain, of Bismarck, N. D., has returned from his European trip. He was accompanied by his wife, and they both took special work in medicine and surgery.

Dr. George H. Freeman, who has been senior interne at the St. Paul City Hospital for the past year, has been appointed assistant physician in the St. Peter State Hospital.

Dr. L. Slominski, of Joliet, Ill., has located at Yankton, S. D. The doctor speaks the English, German, Polish, Bohemian and Russian languages, and will probably have patients of these nationalities.

E. J. Whipple, the Mankato chiropractic, was arrested for operating in LaCrosse, Wis., and gave bail for \$100 for his appearance in court. His friend who signed the bond has been obliged to pay it, Whipple refusing to go back to the state and stand trial.

Dr. Rudolph Jennings assumed control of the National Sanitarium at Hot Springs, S. D., last month. It is now thought the institution may open early in the spring. It is for old soldiers, and will accommodate between three and four hundred. It has already cost the government over a million dollars.

The Washington County Medical Society met last month in Stillwater. Dr. Warren A. Dennis, of St. Paul, read a paper on "The Careful Consideration of the Symptoms Following

Serious Injury." Dr. F. A. Stevens, of Lake Elmo, gave a report of a case. Dr. Cotton, of Marine, and Dr. Furber, of Stillwater, were elected members.

St Joseph's hospital at Mitchell, S. D., was dedicated and opened for patients with appropriate ceremonies on November 15th. It is constructed of pressed brick, thoroughly built and modern in every respect with the latest conveniences for the sick and for operative work. There are rooms and wards for fifty patients, a large operating room, and a nurses' training school in connection. It was built by the Benedictine Sisters, and cost \$30,000.

The Minnesota Valley Medical Association will hold its twenty-seventh annual meeting at Mankato on Tuesday next (December 4th). Papers will be read by Dr. M. Sullivan, of Adrian; Dr. F. N. Hunt, of Blue Earth; Dr. Van Buren Nott, of Sioux City, Iowa; and by Dr. W. D. Sheldon, of Minneapolis; Dr. Warren A. Dennis, Dr. Archibald MacLaren and Dr. C. E. Riggs, of St. Paul; Dr. C. H. Mayo, of Rochester; and Dr. H. A. Tomlinson, of St. Peter.

The program committee of The Hennepin County Graduate Nurses' Association in arranging the course of lectures for the winter have deviated a little from the usual lecture given to professional nurses and added to their schedule on medicine, surgery and practical nursing a few lectures on other subjects. They were favored Friday evening, November 9th, when Dr. Thos. S. Roberts delivered his scientific lecture on "Birds." Dr. Roberts beauti-

fully illustrated his talk with lantern-slides and carried the audience through fields and forests into bird-life and their home nests. After the lecture Doctor and Mrs. Roberts had a surprise awaiting the thirty nurses in the dining-room, and their home was thrown open for a social hour long to be remembered by the association.

FOR SALE

A six-bottle Nebulizer complete with floor-pump. New and in perfect condition. Cost \$100. Will exchange for new or nearly new typewriter of standard make. Address, Dr. Victor I. Miller, Westbrook, Minn.

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In southwestern Minnesota, in town of about 400; prairie country; good practice; nearest competitor 14 miles. \$450 buys heavy office furniture, good driving team, practice included with it. Will sell or leave office. Address C. M., care of THE JOURNAL-LANCET.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during the fine season in the delightful city, write for particulars, to New Orleans Poly-clinic, post-graduate department of Tulane Medical College, P. O. Box 797.

FOR SALE

The medical library (standard works) and instruments of the late Dr. F. C. Poehler. Write to or call upon Mrs. F. C. Poehler, Flat 4, 2220 Emerson Ave. So., Minneapolis.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH OF MINNESOTA FOR THE MONTH OF OCTOBER, 1906

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF OCTOBER, 1906

STATE INSTITUTIONS.		Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis-eases of Children	Cancer (?)	Puerperal Septicemia
Fergus Falls, Hospital for Insane.....	13	6															1
Rochester, Hospital for Insane.....	10	1															
St. Peter, Hospital for Insane.....	7	2															
Anoka, Asylum.....	1	1															
Hastings, Asylum.....	0	0															
Faribault, School for Deaf.....	0	0															
Faribault, School for Blind.....	0	0															
Faribault, School for Peeble Minded.....	0	0															
Owatonna, School for Dependents.....	0	0															
Stillwater, State Prison.....	0	0															
St. Cloud, State Reformatory.....	0	0															
Red Wing, State Training School.....	0	0															
Minneapolis, Soldiers' Home.....	3																
Totals.....	34	9												1			1

REPORTED FROM 71 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE OF MONTH OCTOBER, 1906

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis-eases of Children	Cancer (?)	Puerperal Septicemia
Albert Lea.....	4,500	5,657	7	1		2											1	1
Anoka.....	3,769	4,053	0															
Austin.....	5,474	6,489	3		1													
Barnesville.....	1,326	1,566	*															
Bemidji.....	2,183	3,800	6			2												
Blue Earth.....	2,900	2,364	7															
Brainerd.....	7,524	8,134	13													3	3	1
Chaska.....	2,165	2,085	*															
Chatfield.....	1,426	1,300	*															
Cloquet.....	3,074	6,117	6															
Crookston.....	5,359	6,794	6			1									1	1		
Detroit.....	2,060	2,149	6		1													
Duluth.....	52,968	64,942	86	7	1	3	2	6	2	1			2	8	8	9	3	
E. Grand Forks.....	2,077	2,489	1															
Ely.....	3,712	4,045	10			4												
Eveleth.....	2,752	5,332	7	1		1										3	4	
Faribault.....	7,868	8,279	3															
Fairmont.....	3,440	2,955	3															
Fergus Falls.....	6,072	6,692	5												2		1	
Granite Falls.....	1,214	1,340	0															
Hastings.....	3,811	3,810	*															
Hutchinson.....	2,495	2,489	1															
Jordan.....	1,270	1,311	*															
Lake City.....	2,744	2,877	2															
Litchfield.....	2,280	2,415	3	2														
Little Falls.....	5,774	5,856	2															
Luverne.....	2,223	2,272	2			1												
Le Sueur.....	1,937	1,842	0															
Madison.....	1,336	1,604	1														1	
Mankato.....	10,559	10,996	16	2		1										1	2	
Marshall.....	2,088	2,243	*															
Melrose.....	1,768	2,151	*															
Minneapolis.....	202,718	261,974	227	20	4	29	3	7	2	1			1		9	10	16	1
Montgomery.....	979	1,281	1															
Montevideo.....	2,146	2,595	3	1		1	1											
Moorhead.....	3,730	4,794	7															
Morris.....	1,934	2,003	*															
New Prague.....	1,228	1,419	0															
New Ulm.....	5,403	5,720	5															1
Northfield.....	3,210	3,438	*															
Ortonville.....	1,247	1,612	*															
Owatonna.....	5,561	5,651	4			1												
Pipestone.....	2,536	2,885	1															
Red Lake Falls.....	1,885	1,797	0															
Red Wing.....	7,525	8,149	*															
Redwood Falls.....	1,661	1,806	2			1												
Rochester.....	6,843	7,233	4															2
Rushford.....	1,100	1,133	2	1														1
St. Charles.....	1,304	1,238	*															
St. Cloud.....	8,663	9,422	3															
St. James.....	2,607	2,320	0														1	
St. Paul.....	163,632	197,323	192	12	6	6	2	6	2				1		10	8	16	1
St. Peter.....	4,302	4,514	1															
Sauk Centre.....	2,220	2,463	1												1			
Shakopee.....	2,046	2,069	2														1	
Sleepy Eye.....	2,046	2,312	1												1			
So. St. Paul.....	2,322	3,458	1															
Stillwater.....	12,318	12,435	7															
Thief River Falls.....	1,819	3,502	0														1	1
Tower.....	1,366	1,340	0															
Tracy.....	1,911	2,015	1															
Virginia.....	2,962	6,056	*															
Wabasha.....	2,528	2,619	*															
Warren.....	1,276	1,640	*															
Waseca.....	3,103	2,838	*															
Waterville.....	1,260	1,383	1															
West St. Paul.....	1,830	2,100	*															
Willmar.....	3,409	4,040	0															
Windom.....	1,944	1,884	1															
Winona.....	19,714	20,334	18	1		2											1	1
Worthington.....	2,386	2,276	0															

*No report received

REPORTED FROM 66 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS FOR THE MONTH OF OCTOBER, 1906

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Croup	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer (?)	Puerperal Septicemia
Ada.....	1,253	1,515	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Adrian.....	1,258	1,184	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aitkin.....	1,719	1,896	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Akeley.....		1,636	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Alexandria.....	2,681	3,051	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Appleton.....	1,184	1,321	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Belle Plaine.....	1,121	1,301	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Benson.....	1,525	1,766	0	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Breckenridge.....	1,282	1,350	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Buffalo.....	1,040	1,124	3	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Caledonia.....	1,175	1,405	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Canby.....	1,100	1,505	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cannon Falls.....	1,239	1,460	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cass Lake.....	546	1,062	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chisholm.....		4,231	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dawson.....	962	1,056	0	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..
Delano.....	967	1,023	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fosston.....	864	1,000	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Frazee.....	1,000	1,146	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glencoe.....	1,780	1,805	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glenwood.....	1,116	1,718	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Graceville.....	856	1,032	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grand Rapids.....	1,428	2,055	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hallock.....	805	1,014	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hibbing.....	2,481	6,566	30	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..
Jackson.....	1,756	1,776	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Janesville.....	1,254	1,205	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kasson.....	1,112	1,049	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kenyon.....	1,202	1,252	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Lake Crystal.....	1,215	1,231	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Lanesboro.....	1,102	1,041	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Long Prairie.....	1,385	1,256	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madelia.....	1,272	1,290	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Milaca.....	1,204	1,319	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mountain Lake.....	959	1,063	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
North Mankato.....	939	1,129	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North St. Paul.....	1,110	1,400	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Olivia.....	970	1,019	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Osakis.....	917	1,056	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Park Rapids.....	1,313	1,719	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pelican Rapids.....	1,033	1,095	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Perham.....	1,182	1,366	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pine City.....	993	1,092	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plainview.....	1,038	1,140	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Preston.....	1,278	1,320	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Princeton.....	1,319	1,704	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Renville.....	1,075	1,229	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rush City.....	987	1,041	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rushford.....	1,062	1,040	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
St. Louis Park.....	1,325	1,491	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sandstone.....	1,189	1,589	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sauk Rapids.....	1,391	1,552	3	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Scanlon.....		1,122	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Stillwater.....	1,422	1,572	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springfield.....	1,511	1,546	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Spring Valley.....	1,770	1,573	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Staples.....	1,504	2,163	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Two Harbors.....	3,278	4,402	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wadena.....	1,520	1,868	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wells.....	2,017	1,814	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
West Minneapolis.....	2,250	2,530	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wheaton.....	1,132	1,346	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
White Bear Lake.....	1,288	1,724	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winebago City.....	1,816	1,553	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winthrop.....	813	1,031	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Zumbrota.....	1,119	1,129	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
State Institutions.....			34	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other parts of State.....	1,012,328	1,085,886	410	40	8	17	6	8	1	1	1	..	8	..	21	32	15	3
Total for State.....	1,751,395	1,979,658	1210	101	20	82	16	28	7	3	1	..	10	3	78	81	58	5

Still births and premature births, 47 (not included in above totals).

*No report received.



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SOME NEW ADVERTISERS

For a good many years we carried few or no advertisements other than of medical or surgical preparations or appliances, and we did so of choice; but during the current year we have solicited and accepted quite a number of general advertisements, but only from men and firms, not only of the highest financial standing, but of most honorable reputation. We take pleasure in calling attention to some of them in order to show the standard we have set for such advertisements.

Messrs. McKibbin, Driscoll and Dorsey, of St. Paul, dealers in furs, is one of the largest and most highly respected firms doing business in the Twin Cities. Their name upon a garment is an absolute guarantee of its quality, and, surely, in no other line of purchases does one need a guarantee of quality so much as in furs, for the average man or woman knows nothing about the quality of fur goods.

The North Star Woolen Mills, of Minneapolis, make the finest line of blankets made in the world, and they make them upon honor. All the blankets seen in Pullman sleeping cars are made by this company. The exquisitely beautiful blankets seen in the display windows of the largest stores in America, and perhaps in Europe, are made by this company. The strong, warm, and enduring and low-priced blankets seen in the camps of woodsmen and miners are also made by this company. The best hospital blankets are made by this company. Their annual sale of slightly damaged blankets is an event in the Twin Cities, and genuine bargains are always to be obtained.

Messrs. Raudenbush & Sons, St. Paul, is one of the largest music houses in the West, and they will soon build the largest piano manufacturing plant west of New York. They sell pianos and organs, and all other kinds of musical instruments. They are the sole agents of the Cecilian, which is far and away the best mechanical piano-player made, and it is a joy forever in a home where there are no good piano performers.

Graham Hall, of Minneapolis, a school for girls, is a school we believe worthy of the highest commendation. The principal and teachers of Graham Hall come into that intimate personal contact with pupils which builds character as well as gives education.

The Tri-State Telephone Company offers physicians an investment, and presents some interesting figures concerning its business. Mr. E. H. Moulton, the president of the company, founded and built up the Farmers' and Mechanics' Savings Bank of Minneapolis, devoting over thirty years to this work. as manager of that bank, one of the largest in the country, he made a highly honorable name in financial circles, East and West. He gave up the management of the bank (he is still its vice-president) to manage the Twin City, now the Tri-State, Telephone Company. He found a company with a large and lucrative business, with a modern plant, and with no water in its stock, so often used to pay for discarded equipment or to enrich promoters. In a brief time he put the business on a firmer foundation, extended its lines into many states, and made it pay handsomely.

Such a record begets confidence, and makes investment safe.

The Wells & Dickey Company, of Minneapolis, deals in farm mortgages. The members of this company have

very substantial financial ratings, and are known to be extremely conservative men in business.

They deal largely in North Dakota mortgages, and we are sure such an investment, wisely made, cannot be questioned.

We are glad to have such a firm represented in our columns, and we commend them to our readers.

The Minneapolis Milk Company is one of the largest distributors of milk in Minneapolis, and the manager holds himself ready to meet all the strict requirements necessary to give the city such a supply as the medical profession may demand, so far as the Company can control the matter.

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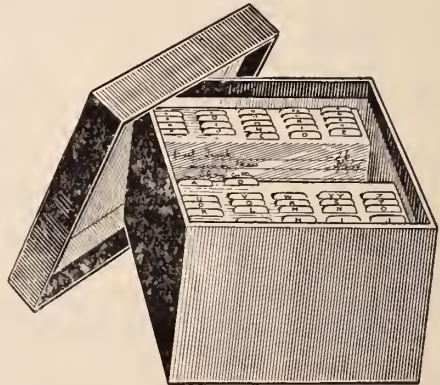
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From Dr. Toland, down in Texas, comes the statement: There's nothing surpasses Calcalith (Abbott). I gave it a fair test two weeks ago in a patient who had cystitis, prostatitis, urethritis and gonorrhoeal rheumatism and was passing 'matter' (pus and blood) with his urine. He surely was in a bad condition, but Calcalith with other alkaloidal remedies (calcium sulphide and tonics) soon brought him around all right."

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Very respectfully,
(Signed) J. E. CROUCH, M. D.

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Dr. David Walsh, senior physician to the Western Skin Hospital, London, writes: "Glyco-Thymoline was brought to my notice as an excellent lotion for nasal and oral sprays and washes. On due inquiry it was found to fulfill the two conditions usually recognized by medical men in the United Kingdom as vouching for the character, so to speak, of such a preparation. First, its advertisements are accepted by our three leading journals, The Lancet, British Medical Journal and the Medical Press & Circular. Secondly, its composition is not a secret, its formula being freely published. Under these circumstances I determined to try the effect of this preparation in a few suitable cases. As a general antiseptic that does not coagulate albumen and is non-irritant, deodorant and practically non-poisonous, Glyco-Thymoline has clearly a wide range of usefulness. My own observations, however, have been practically confined to its use in the nose and mouth, with results that have proved satisfactory in every instance, especially in acute coryza, pharyngitis, influenza and septic conditions of the mouth.

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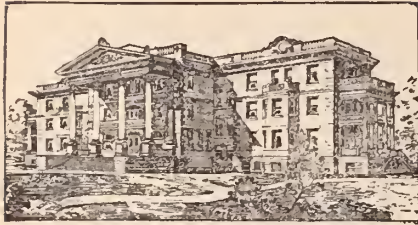
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THE PREVENTION AND TREATMENT OF CANCER*

By R. E. FARR, M. D.

MINNEAPOLIS

In considering this important subject my purpose is to call your attention to what I regard as some of the salient points in dealing with cancer. Cancer seems to be increasing in frequency. Its treatment, while improving, is unsatisfactory, and the mortality is appalling.

In what manner may we accomplish the best results in its management and how may we improve the efficacy of the means at our disposal?

First, by preventing its occurrence wherever possible; and

Secondly, by making a diagnosis early enough to permit of radical surgical treatment.

While the actual cause of cancer is not known trauma and chronic irritation are well recognized factors in its causation. Tissues that are subjected to repeated insult over long periods of time are prone to become the seat of malignant growth. Clinically, this is abundantly illustrated. The common sites of cancer are identical with the points most often subjected to irritation of various kinds. The lips of the smoker, the pyloric end of the stomach, the rectum, the female breast, and the cervix of multiparæ are among the most common of these sites.

Mayo Robson has spoken of the "precancerous stage." We know that there are many conditions which, if allowed to go untreated, may, and frequently do, result in cancer. It is in the proper treatment of these conditions that we may prevent, to a great extent, the occurrence of the disease.

Chronic ulcers about the mouth, cervix, or rectum are often the precursors of malignant growths in these localities. This is true also of ulcers upon the skin when allowed to run indefinitely. I have seen an epithelioma of the skin of the leg in a girl of 14 resulting from the continual irritation and neglect of such an ulcer. Here amputation was necessary, while, had the condition been attended to in time, a slight operation would have effected a cure.

Skin cancer almost always results from warts, moles, eczema, ulcers, scars, sebaceous cysts, etc., which are easily treated without danger if taken in time. Black moles often give rise to sarcoma, and, while I would not advocate their removal in all cases, they should certainly be excised if they show signs of irritation. The same treatment should be followed in cases of senile keratoses, warts, scars, ulcers, and cysts in case they begin to give trouble. Eczema also should receive appropriate treatment.

Cancer of the uterine cervix, a very common disease in women who have borne children, is rare in nulliparæ, while cancer of the uterine body occurs with equal frequency in both. Scars, ulcers, and erosions here undoubtedly play an important part in its production, and their early removal, which is a very simple procedure, should be more often accomplished.

Cancer of the pylorus is preceded in a large proportion of cases by a fairly definite history of ulcer. Robson places this percentage at 59 in his cases of gastro-enterostomy for inoperable cancer. Graham noted it in 54 per cent of his cases. Mayo and other surgeons are positive that there

*Read before the Hennepin County Medical Society, October 15, 1906, and, by request, before the Pathological Society, November 12, 1906.

is a direct etiological relationship between the two conditions. If we assume this to be true we must not allow our gastric ulcers to become chronic. If they do not respond to proper medical treatment, an operation should be done. Excision of the ulcer or the diversion of the food through another channel will allow healing, and the chance of malignant change will be greatly reduced, to say nothing of the relief afforded from suffering and from the well known dangers to which the victims of ulcer are subject.

In cancer of the biliary tracts we have another striking example of what may result from neglect of a condition which is surely amenable to treatment. Of course, but a small number of people affected with cholelithiasis have cancer, but, on the other hand, a vast majority of cases of cancer of the gall-tracts are found to be associated with gall-stones. The following case is an illustration:

Mrs. C., aged 50, referred by Dr. Nippert, gave this history: One year ago after having a fall she began having pain in the right upper abdomen radiating to the back; she felt a tender "lump" to the right of the navel. One month ago she had a severe attack of vomiting. Has lost a great deal of weight. Examination shows a hard movable tumor lying to the right of the navel, connected, apparently, with the liver and reaching to McBurney's point. Exploration showed the mass to be a greatly thickened gall-bladder containing two olive-sized faceted stones. The mass had every appearance of being malignant. A piece of the entire thickness of the anterior wall was removed for examination. Dr. Corbett reported that it showed no signs of malignancy, being simply scar-tissue, and, as the pain had relapsed and the growth appeared somewhat smaller than before, excision was attempted. Portions of the duodenum and liver had to be removed with the growth and the patient died from exhaustion on the eighth day. The anterior wall was still found to consist of scar-tissue only, while the posterior wall was carcinomatous. Here the evidence is quite conclusive that the malignant growth was the result of the degeneration of chronically inflamed tissue. Earlier treatment would have changed the aspect of this case entirely.

Gall-bladder disease, ulcer of the stomach, and allied conditions should be corrected earlier. Indecision and neglect to grasp the favorable opportunity frequently result disastrously. The results of treatment are uniformly good, and the ultimate mortality is much lower than in the cases where a so-called conservative plan is followed.

BENIGN TUMORS

Another well known source of cancer is through the degeneration of certain benign tumors. Adenomata and cysts not uncommonly undergo malignant change, and these growths

should be carefully watched. In general, when they produce no symptoms they may be left alone unless it is desirable to remove them for esthetic reasons. They should be removed, however, in case they begin to lose their benign characteristics, or in case malignancy cannot be positively excluded. The following case well illustrates this point. It was seen in the practice of the late Dr. Dunn.

Mr. B., aged 63, noticed forty-one years ago a small gland in the parotid region, on the right side. In ten years this had reached the size of an egg. It remained this size until one year ago when it once more began to enlarge slowly. During the last three months its growth has been rapid. The growth is now the size of an orange, and is adherent to the skin and the underlying tissues. A difficult operation and an early recurrence close the history of this characteristic case.

Tumors of the breast, especially, should be looked upon with suspicion in women past twenty-five, or even younger. If we stop to consider that 80 per cent of all breast tumors in women over 35 are malignant and that one-half of the remainder will become so if left alone, we must at once realize the fact that we are assuming a great responsibility when we advise this class of cases to await developments. As a rule the family physician is the one upon whom this responsibility rests, for he is the first one consulted in the majority of cases.

Mrs. S., aged 27, referred by Dr. Corbett. She has one child, 5 years old. No previous mastitis. Complains of a small nodule in the upper-outer quadrant of the left breast. No axillary glands can be felt. Immediate operation and diagnosis by the use of the freezing microtome was advised, but not accepted. She returned to me about two months later saying that she had been advised by a surgeon to wait awhile, and that she had also had x-ray treatments by a physician and massage by some one else. The tumor was now adherent to the skin, and two or three glands could be felt in the axilla. The tissues, removed after the method described by Dr. J. Collins Warren, proved to be carcinomatous, and a complete operation was done. This woman lost much valuable time and perhaps a chance for a cure through delay and maltreatment which ought to have been avoided. How many physicians have been guilty of similar offences and how many at the present time send them home to await the development of palpable axillary glands so that the diagnosis, and, incidentally, the prognosis, may be more certain?

Ovarian tumors should, as a rule, be removed. Their growth is usually constant and they generally destroy life. A certain percentage of them are malignant, and as it is impossible to recognize these, all growths should be removed when-

ever possible. The following case will illustrate the point:

Mrs. M., aged 66, referred by Dr. LaPierre. For some time the patient has noticed the abdomen enlarging, and has had severe pain in the left pelvis. Multiple cysts of both ovaries, ranging in size from that of a coconut to a lemon, were removed. Examination showed many papillary or cauliflower projections which proved to be malignant.

Since routine microscopic examination of uterine myomata has been practised carcinomatous and sarcomatous change has been found to be fairly common. Here, as in the case of ovarian tumors, early operation is safe and proper.

Polypi about the uterine cavity and rectum should be removed in all cases as soon as discovered.

In the rectum, fissures, ulcers, hemorrhoids, and prolapse should be treated earlier and the advent of malignancy would in many cases be averted.

In considering the results of the surgical treatment of cancer we must take into account the operative mortality and the chances of permanent cure. We must also not lose sight of the fact that we are dealing with a disease that has a mortality of almost 100 per cent if not treated surgically.

The great bulk of human cancers are found in the female breast and uterine cervix and in the intestinal tracts of both sexes. The stomach alone is the seat of about 30 per cent of the cancers found in the human body, the uterus and female breast being next in order.

Uterine cancer, when limited to the body of the organ, gives a low percentage of recurrences, as metastasis occurs late in this condition. The reverse, however, is true in the case of cervical cancer. Here the disease is prone to spread to the surrounding tissues early, and the results of treatment are disappointing. The mortality of simple hysterectomy is low. Extensive dissections give a prohibitive mortality, and the results have not been such as to encourage this kind of work.

Clark, Sampson, and Wertheim, who were among the most ardent advocates of this procedure and who, with Mackenrodt, Ries, Cullen, Werder, and others, have developed it, now remove only the adjacent pelvic lymphatics. Recurrence usually takes place in the vaginal scar. Clark recommends the abdominal route with removal of a wide cuff of vagina, the division being made with the actual cautery, after John Byrn, of Brooklyn. This is probably the operation of choice. Our only hope here, however, seems to lie, not in improving the technic, but in earlier operations.

Every woman complaining of irregularity of the menstrual habit or of a suspicious vaginal discharge should at once be examined. Here, I think, it is a rational procedure to remove tissue for examination in borderland cases, as the following case well illustrates.

Mrs. S., aged 40, mother of seven children. Only complaint is that she tires easily of late and has an occasional show of blood in the vaginal discharges. The cervix simply presented an eroded surface, and a diagnosis was impossible. Microscopic examination of a bit of tissue showed it to be malignant, and hysterectomy was done.

The occurrence of cervical cancer in nulliparous women is rare, but it is occasionally met with.

Mrs. K., aged 44, widow, never pregnant. Three years ago a double salpingo-oophorectomy was done. She came to my office complaining of loss of strength and appetite. She had no pain, but some vaginal discharge, which had been streaked with blood a few times during the past two months. Examination showed well developed epithelioma of the cervix, for which hysterectomy was done. Routine questioning and examination of all women should therefore be practised.

I have already spoken of the necessity of early operation in breast cases. Here the mortality is not over one per cent, and a three year respite, at least, may be looked for in over one-half of all cases operated upon. (Cheyne, Rodman, Robson.) In the future these results are bound to improve. Extensive and careful axillary dissections, removal of the pectoral muscles and fascia, excision of large areas of skin, followed by skin grafting, together with early attack, are making the treatment of this condition far from hopeless. Cancer of the lip gives even better results since wide excision has been practised, and the glands of the neck are more often attacked.

Thus far the permanent results of the treatment of external cancer are better than they are for internal cancer, due principally to the greater ease with which a diagnosis can be made, for cancer of the internal organs is, as a rule, more amenable to treatment at the same stage of the disease. (Munro.)

With regard to the diagnosis of internal cancer, Nothnagel has said: "The only way to arrive at a diagnosis in abdominal cases with indefinite symptoms is to explore." Of course, every known means of arriving at a diagnosis should be exhausted before the adoption of this apparently radical procedure, but I believe that much valuable time is lost in investigation of suspicious cases. Generally, the appearance of positive signs is awaited, and then it is too late.

The mortality following simple exploratory in-

cision is practically nil when made purely for the purpose of diagnosis. The reason that this operation has been considered dangerous is that with it have been included late cases in which exploration was made rather to see if an operation were possible than to simply make a diagnosis. A vast majority of explored cases will be found to have some condition which can be corrected, and if malignant growth is found an early operation may be possible. It is not necessary that a patient present all of the cardinal symptoms, as the following case shows:

Mr. C., aged 56, gave this history: Has been "billious" for twenty years; about ten years ago had a severe spell, vomited often for several days and brought up what he describes as a "tough piece of skin" at that time. Troubled with indigestion for three or four years, and thinks he has lost some weight during the last year. Present illness began two days ago with severe pain at the pit of the stomach; later he vomited several times. The vomitus and stools were dark. His temperature was 99°. Stomach-contents showed an excess of hydrochloric acid and an absence of lactic acid. Microscopically, a few red-blood cells and leucocytes. Stomach seemed large, extending below the navel; no nodules could be felt. Slight rigidity over epigastrium. Exploration under ether showed an ulcerating growth in the lesser curvature close to the cardia with involvement of the gastro-hepatic omentum. Gastrec-

omy was performed after the method of Kocher. He succumbed to a double pneumonia five days later. Autopsy showed the stomach condition to be normal in every respect.

Late explorations, like operations upon hopeless cases, are unsatisfactory though we occasionally have the good fortune to find some unsuspected condition which we may be able to handle. They also tend to bring the proper treatment into disrepute, and a failure may be the means of keeping favorable cases away from the surgeon.

Partial gastrectomy gives a mortality under 15 per cent, and 25 per cent survive three years.

In the intestines also the outlook is far from hopeless. The colon, especially, harbors the disease for a long period before death or metastasis occurs. In fact in a large percentage of cases no metastases are found post-mortem. In the rectum recurrences are more frequent after operation, but the diagnosis is easier and should be made early enough to make radical operation successful in a fair percentage of cases. Here the disease is often mistaken for piles until too late.

In conclusion: I can only repeat that improvement in the management of cancer will be brought about by closer attention to precancerous conditions and early diagnosis, rather than by improvement in technic.

(For discussion, see page 532.)

EARLY DIAGNOSIS OF CARCINOMA*

By J. FRANK CORBETT, M. D.

MINNEAPOLIS

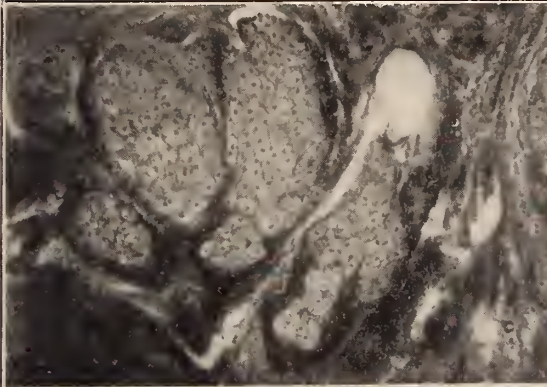
In this paper the microscopic aspect of tumors will be dealt with extensively, and very little attention will be paid to history or gross appearance. The object of this is a practical one. Age, physical appearance or case-history does not often enable a positive diagnosis of malignancy to be made. The gross appearance of tumors, when fully developed, is typical, but early cancers often have the physical peculiarities of some other condition. For these reasons a rapid method of microscopic examination often offers the only certain way of diagnosing early malignancy. The ordinary method of embedding tissue is entirely too slow for practical purposes. However, a portion of the growth may be removed and sections cut by the freezing micro-

tome, stained, and examined in from six to ten minutes. This may be done during any operation with no material loss of time. In my experiences, diagnoses of tumors made in this manner have always been verified by subsequent routine pathological examination.

Before showing slides of early carcinoma, I will review briefly the work that has been done in regard to the etiology of these neoplasms. There are two general explanations of cancers: First, that they are due to parasites; second, that they are the result of eccentric proliferation of cells.

Since the early days of Virchow various intracellular bodies have been noticed in cancer. These have been studied by Thoma, Russell, Ruffer & Walker, and Ruffer & Plimmer, and are commonly called "Plimmer bodies." These bodies, once considered cancer parasites,

*Read before the Hennepin County Medical Society, Oct. 15, 1906, and by request, before the Pathological Society Nov. 12, 1906.



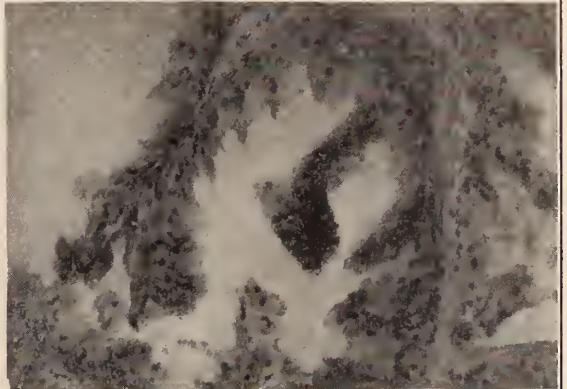
SLIDE 28.



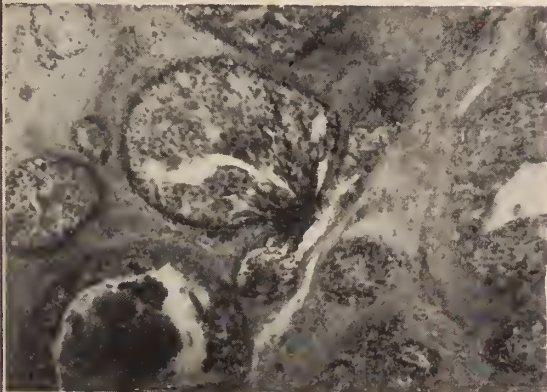
SLIDE 36.



SLIDE 41.



SLIDE 44.



SLIDE 72.



SLIDE 83.

Slide 28. Normal sebaceous glands near the nipple.

Slide 41. Simple papilloma of the breast.

Slide 72. Escape of epithelium beyond normal limits in a case of duct cancer.

Slide 36. Proliferation and down-growth of rete in an x-ray burn.

Slide 44. Papillary arrangement of cells suggesting malignancy.

Slide 83. Proliferation of endothelium in a lymph space in sarcoma of the breast.

are now looked upon as the results of secretory activity of epithelial cells and are not peculiar to cancer. As a matter of historical interest I show a Plimmer body, and include Plimmer's original description². "The parasites are round bodies of diverse size. There is a central portion which I shall here call the nucleus, although there is nothing in common with the biological nucleus. The layer of protoplasm around the nucleus is generally homogenous, and stains less deeply than the nucleus. When the parasite has attained a certain size, a rayed appearance is seen."

Busse, Sanfelice, Klein, and Plimmer obtained *torulæ*, plants closely allied to yeasts, from cancer. These, for a time confused with Plimmer's bodies and proclaimed to be the cause of cancer, were later shown to be one of the secondary infections occurring in neoplastic growths. The study of these organisms does not clear the etiology of cancer, but gives us a more exact knowledge of blastomycetic dermatitis, a disease caused by inoculation of these parasites in the skin.

All subsequent attempts to isolate cancer parasites by culture have been futile³. Some stages of coccidium infection suggest cancer. When the entire course of coccidium is studied, the facts necessitate a different conclusion.

The proliferation of epithelium in *molluscum contagiosum* also resembles beginning malignancy, but *molluscum contagiosum* is as much an enigma as to its origin as cancer.

In the transmission of cancer from one rat to another, Jensen has shown that the tumors arose from proliferation of transplanted cells, and not from infection; i. e., they were true transplantations. Time will not allow me to detail the various experiments concerning this point with filtered and unfiltered cancer cells.

E. H. Nicols⁴ has undertaken a series of experiments, by implantation of tissues, to see if tissues set free from normal environments could acquire power of unlimited growth. The results of these experiments show that certain types of epithelium can be transplanted from their normal position into another part of the same animal. Such transplantations maintain their potentiality of growth and retain their original characteristics, but do not infiltrate the tissues or form metastases. Transplanted fetal structures do not proliferate as embryonal cells, but complete their developmental intent, and appear as adult cells.

J. N. Hyde⁵ says the skin is sometimes hypersensitive to light, and as a result we may have a train of sequences beginning with hyperemia and ending with cancer. In proof of this is

cited xeroderma pigmentosum and cancer resulting from x-ray burns.

In a case of x-ray burn, referred to me for examination, I found the following:

1. Proliferation of the rete.
2. Atrophy of the granulosum, and further down-growth of the rete. (Slide 36.)
3. Endarteritis of vessels of corium.
4. Invasion of corium with epithelial masses.

W. R. Gaylord⁶, experimenting with mouse-carcinoma, has found in 2500 inoculations 101 cases of spontaneous cure, and that cured cases become immune against future inoculation. In conclusion he states: "Whatever the nature of this immunity, it does not appear to be cytolytic in its action, the histological picture indicating that the epithelial cells are in some way robbed of their power of distinct proliferation. An immune body is suggested as the cause."

The weight of experimental evidence at the present time tends to show that cancer is not an infection, but a riotous proliferation of cells, incited by some stimulant or freed from their natural restraint. Clinical evidence substantiates this in the sequence of cancer to cholelithiasis, to gastric ulcer, and to cystic disease of the ovaries. In Slide 18 we have an example of malignancy following gall-stones. This case was operated upon for gall-stones in May by Dr. R. E. Farr. At that time a portion of the gall-bladder was removed and found not malignant. Two months later the case was re-operated upon and found malignant. The gradual tendency of the epithelium to become more and more atypical is clearly shown by the increasing height of a single layer of columnar cells and their finally piling up into an adenocarcinoma.

That gastric ulcer may become carcinomatous is shown by the next specimen. The case from which this was obtained gave a typical history of ulcer. There was an excess of HCl and the usual clinical evidences of ulcer. Macroscopically the growth appeared as an elongated ulcer with infiltrated edges. Microscopically the walls of the ulcer are densely packed with carcinoma cells.

On the origin of adenocarcinoma from ovarian cysts, I will show three specimens. The first is from a case of Dr. Sweetser's, and shows a cyst wall with papillary outgrowth. The second is from a case of Dr. Farr's and shows a fully developed adenocarcinoma in an old cyst. Dr. Abbott furnished the third slide from a case with similar history. Another specimen loaned me by Dr. Abbott shows the outgrowth of cancer from an adenoma of the cervix.

The outgrowth of cancer from warts and moles, and the transformation of fibroma into sarcoma, and of adenoma into cancer, add additional evidence. The best results from surgery

demand that all structures removed by the surgeon should be examined microscopically. This not only applies to suspicious cases, but should be a routine procedure. An appendix may be malignant and yet not differ in outward appearance from a hundred other non-malignant appendices. Had there been the custom of universal pathological examination, it is probable that the life of Dr. Harper might have been saved. Malignancy lies in wait where we least expect it. This is especially true of breast tumors. I have often seen apparently insignificant tumors in the breast that were malignant. The policy of waiting until the diagnosis becomes clinically certain is a dangerous one. The specimen shown is a good illustration. The patient, a woman 28 years old, noticed a small indurated area of the breast in August. This was free from the skin, but was intimately connected with the breast. Operation was refused by patient, who returned in October. At that time the growth was slightly larger, but could in no way be absolutely distinguished from mastitis. A portion of the growth was removed by Dr. Farr, and a diagnosis of carcinoma made from frozen sections. This was followed by complete operation. The round-celled infiltration about tumor cells indicates rapidly spreading growth.

On the other hand, I have found malignancy not to exist, by frozen-section methods, and afterward confirmed by subsequent examinations, in breasts clinically diagnosed as carcinoma.

The clinical appearance of malignancy in one of these cases was simulated by chronic cystic mastitis. Before considering in detail the changes peculiar to chronic cystic mastitis, the histology of a normal breast should be reviewed. The normal acini in a middle-aged nullipara consist of a double layer of cells completely filling the cavity and a well defined basement membrane. This is the type of a normal breast. The milk-ducts present an irregular outline on transverse section, and if cut obliquely give appearance of piled up epithelium. There are numerous sebaceous glands near the nipple. These are epithelial structures, but should not be mistaken for cancer. (Slide 28.)

Pregnancy alters this picture materially. The acini increase in size during gestation, and the epithelium becomes that of a secreting gland. As the production of secretion continues, these acini become more and more dilated and the epithelium more and more flattened, until we have merely thin-walled bags filled with milk. A section from a breast emptied by nursing shows acini that have become so much distended that the epithelium lining their cavities has lost any resemblance to that type of cell.

The case of chronic cystic mastitis referred

to was one operated upon by Dr. Sweetser. This patient had a large adherent tumor in the outer and upper quadrant of the left breast. A number of surgeons had unhesitatingly pronounced this malignant. A portion of the breast with the tumor was removed, and a diagnosis of chronic cystic mastitis was made on frozen section. In this the acini are irregular and dilated. The basement membrane is well marked, and there is no tendency of the cells to invade surrounding tissues. The milk-ducts are surrounded with round-celled infiltration. In some instances the connective tissue encroached upon the lumen of the ducts, making the so-called intracanalicular fibroma.

The most classic case of chronic cystic mastitis is one I examined for Dr. Little. In this there were one large cyst and innumerable smaller ones, resulting from dilated acini. This case was considered only doubtful from the clinical standpoint.

The next case of chronic cystic mastitis shows a papillomatous outgrowth of epithelium from the duct wall. The occurrence of these papillomatous outgrowths has aroused the question as to their malignant tendency. (Slide 41). This type with high columnar epithelium and a distinct connective-tissue stem, I believe, is not malignant because I have frequently encountered them in breasts partially removed that did not become malignant. Further, where these have incidentally occurred in cases of carcinoma they apparently take no part in the condition of malignancy.

Papillary arrangement of cells of an entirely different character sometimes occurs. This is illustrated by a case submitted by Dr. Hvorslef (Slide 44). In this case the papillomata are composed of atypical epithelial cells, and result from the fusion of two or more dilated acini with epithelial proliferation at junction.

The fact that a similar process occurs in beginning adenocarcinoma, leads to the belief that this particular form of papilloma foreshadows malignancy. This point is illustrated by a series of specimens from a case of beginning carcinoma. This case also shows dilated acini that have fused. In some instances the epithelium at point of fusion has proliferated. Other areas show this proliferation carried still further, until finally the epithelium breaks through the basement membrane and invades surrounding tissue.

Next we will consider the condition found in duct cancer. From a breast removed by Dr. Farr, papillary outgrowths, of extreme grade of development, occur into the lumen of the large ducts. Occasionally simple proliferation and desquamation of the epithelium is the prominent change in the ducts. More commonly the epithelial proliferation is volcanic in character.

The acini in certain places are apparently normal. In other areas they seem to increase in size, growing larger and more atypical until finally we have an appearance of adenocarcinoma. In some sections the epithelium has the appearance of proliferation and desquamation; in others it acquires the power to infiltrate (Slide 72.)

It is hardly necessary in this paper to detail the description of an ordinary scirrhus carcinoma.

Besides the conditions already described, cancer of the breast sometimes clinically resembles sarcoma, adenoma, fibroma, myoma, and even tuberculosis. The microscopic differentiation of these is practical and clear, as the following cases illustrate:

I have encountered but one case of sarcoma of the breast, and that was an endothelioma. In the portion of the breast recently invaded by this tumor may be seen the remains of the acini. They have undergone hyalin change and appear as mere shadowy rings in the general round-celled background. Older portions show a slightly different picture, due to degeneration. The lymphatics of the pectoral muscle show marked infiltration. This demonstrates the universal change in these structures. Tracing the lymph-spaces into their origin we find finally a single lymph capillary (Slide 83) with proliferated endothelium, showing the origin of this tumor. All of the larger lymphatics of the body show marked sarcomatous change. This is universal, extending throughout the lymphatic system, even to the viscera. This is seen in walls of appendix, though microscopically this organ was normal.

Fibroma of the breast is often mistaken for cancer by the surgeon. To illustrate this I show a section from a case that had positively been diagnosed as cancer by a competent man. This frozen section was demonstrated to be an intracanicular fibroma. Similar to this is a pericanicullar fibroma from another patient.

Adenoma clinically resembles carcinoma. One of the most typical specimens I have was removed by an unnecessary Halstead operation. Tuberculosis generally bears but little resemblance to cancer, but mistake has been made clinically. Under the microscope the round-celled infiltration and the presence of cells establish the diagnosis beyond possible doubt. Myoma in the single specimen in my possession shows a picture usual to that condition.

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DISCUSSION OF THE TWO PRECEDING PAPERS

DR. H. B. SWEETZER: The papers of the evening have been of the greatest interest, partly because of the able manner in which they have been presented, but principally on account of the subject of which they treat. The etiology, early diagnosis, prevention, and treatment of carcinoma form topics which, today, are very much alive for the medical world. Taken in the aggregate, the mortality from malignant diseases is appalling, and apparently, with the higher development of civilization, the mortality seems to be on the increase. Any advance in our knowledge, either from the laboratory or clinical standpoint, which will tend to lower this mortality will be of inestimable value to mankind.

Outside of the one caution to avoid constant irritation of a part which seems to act as a cause of malignant degeneration, it is difficult to see how any efficient means of prevention may be promulgated, until we know more definitely concerning the etiology of carcinoma.

As regards treatment, the most vital point, in the light of our present knowledge, or rather lack of knowledge, is the fact that in the life-history of every cancer there is a period in which it is absolutely localized, and that during this period it may be entirely eradicated and is not liable to recur. This period, although indefinite, belongs to the early stage of the growth, and it is this fact that makes early diagnosis of such momentous importance. Unfortunately, the great majority of cancers do not come under observation until this period has passed, so that early diagnosis and resultant complete extirpation are no longer possible. There are several reasons why this is so, and they are such that it seems hardly probable that any great improvement will occur in the near future, or that the percentage of permanent cures will be much increased from operative treatment. Most important of these reasons, I believe, is the insidiousness of the early course of cancer. Producing practically no symptoms, the patient is not aware of the fact that he is the host of a malignant growth, and of course does not seek relief. When symptoms do become prominent, the period of localization has only too often disappeared, and metastasis has occurred. This is especially true of internal cancer.

The negligence of the family physician I believe to be very much exaggerated and over-rated as a cause of delay, especially in this generation of well-educated physicians.

Dr. Corbett has struck the keynote to the most available success when he says that all tumors, with the slightest suspicion of malignancy, should be submitted to operation and to immediate diagnosis by means of frozen sections. This is done now in the large clinics, and ought to be made possible in the smaller medical centers.

In conclusion, I wish to emphasize the fact that for the present no plan of treatment has supplanted that of radical removal by the knife, and that all other plans are dangerous because of the delay. Some day, possibly, a method of treatment more efficient in its permanency of results may be devised, but that day has not yet arrived.

DR. A. B. BARTON: The subject of cancer is one of the most important in medicine—important to the physi-

cian because its etiology is not known and because treatment has been so unsatisfactory; important to the patient because of the high mortality. The general impression which now exists, that cancer is universally fatal, does not add to the opportunity of doing these people good. There is a certain education required of the public and also of the physician which will be of inestimable value in eradicating the disease. Every one should recognize the fact—that in every case of cancer there is a time when it is a local affair and that if then it were completely extirpated a cure is almost certain.

I am specially interested in cancer of the uterus. This organ probably is more frequently attacked with cancer than any other organ of the body unless it be the stomach. Its early recognition and removal give probably the best results of any of the organs of the body operated upon for cancer. And yet even today physicians are telling women who are having excessive flowing, if they are between the ages of 40 and 50, that it is due to change of life, and let it continue at that until the golden opportunity has passed. Not only should the physician know that an excessive flow at that age is a danger signal which should be immediately investigated, but he should educate women to look upon it as such, and to seek advice immediately when it occurs. There are enough cases on record where women have lived from eight to twenty years after a complete extirpation of the uterus for carcinoma to prove that a cure is possible.

I am glad to hear Dr. Corbett speak of the transplantation of carcinoma. I have been skeptical as to whether this ever occurred. Dr. Senn tried the transplantation of carcinoma from a patient to himself, but it failed to develop. Other experiments have been tried of transplanting from one part of the body to another, and, I believe, these have universally failed. The experiments now being carried on in mice may lead, sooner or later, to the elucidation of the etiology of the disease. Like tuberculosis, which for so long a time was believed to be an incurable disease and which was so obscure in origin but is now perfectly clear, so, I believe, will the dark places of cancer be cleared up in the near future.

Two years ago I operated upon a case of cancer of the uterus and until a short time ago the patient was perfectly well. If I have done nothing else I have given her two years of health and happiness. About four years ago a sister-in-law of mine had an epithelioma removed from the upper eyelid by Dr. Simpson, and up to the present time there has been no sign of a recurrence although it had recurred twice from previous operations, which were not thorough. It had also been treated with the x-ray for a year with its disappearance and there was a recurrence worse than ever.

I am convinced that the only treatment of any avail, so far as our present knowledge goes, is surgical, unless the treatment of methylene-blue proves as valuable in the hands of others as it has in the hands of Jacobi, of New York.

DR. A. W. ABBOTT: We are now able to begin the stamping out of tuberculosis because we know the biology and morbid effects of the tubercle bacillus. Although we know a good deal about its manifestation, its effects on the tissues, and its terrible mortality, we know nothing as yet of the underlying cause of cancer. We can see, therefore, why the only therapeutic advance we have made is that we can make excisions now that no one dared to make thirty years ago.

We believe now that the disease is at first strictly local, that its course is persistently progressive, and that it, either by its own secretion, or by interfering with the secretion of invaded organs, together with the ex-

hausting pain, terminates life ordinarily within three years. We have also found that if we can excise the cancer while it is yet local, we can eradicate the disease.

We need not discuss further the importance of an early diagnosis. We must remember that by the time a cancer can be diagnosed from the clinical symptoms it is generally too late for a radical cure. This does not so positively apply to the easily accessible parts of the body as to the abdominal cavity, nevertheless three-fourths of all the cured cancers have been situated on that part of the body that cannot be hid, namely; the face. A well developed cancer can be readily diagnosed both clinically and microscopically, but this does not serve the patient or the surgeon. It is too late. How shall we diagnose the early stage of cancer? First, by making a minute examination for cancer in all patients of the cancerous age who present the slightest symptoms of the disease; and, second, finding a growth that we do not know is not cancer, either remove it or subject a portion to the microscope. It is just here that we meet with the greatest difficulty. There is undoubtedly a precancerous stage, the histology of which we know absolutely nothing, and we can say about as much of the earliest stage of the disease as it affects the first epithelial cells to become involved.

So far, the inoculation of mice, rats, and monkeys has been uncertain and unsatisfactory. Until a large number of animals can be made cancerous with the same certainty that the guinea-pig can be made tuberculous, and the disease studied from its inception, we shall still be in the dark as to the earliest appearances.

The next stage, the microscope showing cancer but surrounded by normal tissue, is the latest period in which we may hope to make a radical cure. Even at this time quite a large percentage of cases show carcinomatous involvement of distant lymph-nodes.

At this early stage, the cancer mass shows the one striking feature which distinguishes it from all benign growths,—the picture of disorderly, unrestrained overstimulation; the epithelium has lost its uniformity and orderly arrangement; and there is a great variation in size, shape, staining qualities and nuclear forms. Especially in a tendency of the epithelium to invade territories to which it does not belong does the disease violate all physiologic laws of tissue development.

This idea of a lawless, ungoverned, and over-stimulated development of the epithelium has been of the greatest help to me in differentiating cancer from other tissue changes, such as granulation, inflammation of mucous membranes, mycetic diseases, etc.

After all, in many cases the closest study will not avail in making a diagnosis. One of the most rapidly fatal cases of cervical cancer in a young woman of 26 years showed in the stained sections only the slightest deviation from the normal type, although made at a time when the symptoms were pronounced. As Cullen very neatly puts it, in describing an illustration of a case suggesting squamous-cell carcinoma:

"If this then is really the commencement of malignant growth, the neoplasm has been taken in the earliest stage, and the uterus has been removed."

DR. J. CLARK STEWART: I think the Hennepin County Society is to be congratulated upon having two papers of so much merit as those of Dr. Farr and Dr. Corbett presented before it.

As you all know, the subject is one of especial interest to me, and one of the utmost importance to the medical profession, both because of the increasing mortality of cancer and the necessity, if our results are to be improved, of more thoroughly instructing both the profession and the laity. The fate of a patient with cancer depends largely upon the knowledge, honesty, and skill of the first practitioner whom the patient con-

sults, for delay due to incorrect diagnosis or improper advice often prevents the patient obtaining skilled surgical assistance when it can do any permanent good. The laity must be instructed to seek medical advice early for every tumor no matter how innocent-appearing, because any tumor, especially those occurring after middle age, should be considered as malignant until proved to be benign by careful examination, and where such examination still leaves uncertainty all such tumors should be promptly removed and diagnosed microscopically.

In regard to the microscopic examination of tumors at the operating table, as advocated by Dr. Corbett, nothing can be said to detract from the great value of such a routine procedure. It is only in this way that some doubtful cases can be accurately diagnosed. However, it is not necessary for those who cannot work with this most accurate aid to diagnosis to despair of doing good surgery against malignant disease, because in the large proportion of cases the trained clinician can make a fairly accurate diagnosis from the gross appearance of the removed tumor, and operations based on such naked-eye diagnosis should only fail in occasionally being more extensive than would seem necessary after a microscopic diagnosis. Certainly, all first-class hospitals should include in their operating-room equipment the apparatus for the making and examining of frozen sections, and such aid should be utilized by everyone operating for suspected malignancy.

There has been too much imperfect operating done for malignant disease by men who were either ignorant or indifferent to the best interests of the patients.

DR. J. H. STUART: I feel somewhat disappointed that the discussion of the treatment of cancer before this large body of physicians and surgeons should pass without any reference to the use of the Roentgen ray or other forms of radiant energy. Many surgeons seem disposed to brush aside these forms of energy in a sort of final way, as though they were not to be considered in this connection at all, but no such disposition has been manifested on this occasion. It may be that the experience of these surgeons has led them to such a conclusion. The use of the Roentgen ray is in its infancy. It is a fruitful source of mischief, and some operators have had experience of this kind, but others have been more fortunate, and after much experience are able to make favorable reports which are not to be overlooked. Williams of England, Williams of Boston, Pusey, Beck, Jenner, are of those who report favorable results in the treatment of cancer by these agencies.

There is a well recognized dark side to the surgical treatment of cancer. There is too often the inevitable recurrence, and there are the inoperable cases, in many of which the value of the Roentgen ray has been observed.

Its value has also been recognized in post-operative cases with the strong probability of destroying the remaining scattered cells, thus preventing a recurrence. For obvious reasons also, it undoubtedly is of value in pre-operative cases if properly used.

In view of the seemingly increasing rate occurrence of cancerous diseases, and the growing suspicion that almost any benign abnormal growth or tumor of the skin or other tissues, is liable to become malignant, to refer everything of the kind to the surgeon, might lead to a "riot" of surgery that the people would hardly stand.

DR. J. W. BELL: Permit me, before attempting to discuss either paper, to congratulate this Society on having among its younger members men capable of presenting such a carefully prepared and eminently practical paper as we have listened to tonight.

Dr. Farr very correctly calls attention to the fact that cancer is becoming more frequent. This is certainly true of gastric and intestinal cancer. While it is true that we have made no known advance in the direction of solving its etiology, we can justly claim some advance in the direction of an earlier diagnosis, especially in gastric cancer.

The doctor calls attention to the fact that tissues subjected to repeated insult over long periods of time are prone to become the seat of cancer, and in this connection refers to the predisposing influence of scars, ulcers, and erosions of the uterine cervix, advising their early removal. I do not believe that the cervical erosion is by any means as great a menace as the gastric erosion or ulcer, consequently I believe we should be guarded in our advice, in order that we may not resuscitate the custom, familiar to all the older practitioners, in vogue twenty years ago, of repairing all lacerations, including extremely slight and imaginary ones.

The indefinite term, *pre-cancerous stage*, has been frequently used by the essayists and others taking part in the discussion. Our knowledge of when this stage begins and ends, during the clinical course of cancer or any other disease, must of necessity be vague and indefinite. A patient is either cancerous or he is not; he is either tuberculous or he is not; therefore our knowledge of disease is not increased or our ignorance lessened by the use of such indefinite and meaningless terms as *pre-cancerous* or *pre-tuberculous*.

DR. L. A. NIPPERT: The early diagnosis of cancer of the stomach is particularly difficult, as the disease attacks by preference the pylorus, which is inaccessible to palpation or percussion. When the growth attains a size which permits its discovery by physical examination, the chances for successful removal are small, indeed. We are therefore compelled to rely on the history, the general appearance of the patient, and the laboratory findings for data upon the basis of which we feel justified to recommend an exploratory laparotomy.

Continued symptoms of indigestion in a person over forty years of age, especially if pain be present, with disproportionate weakness and loss of weight, combined with anemia and a facial expression of gastric discomfort, should be sufficient to advise an exploratory incision. If examination of the stomach-contents shows absence of HCl and presence of lactic acid, laparotomy should be insisted upon.

Cancer, wherever found, is a surgical disease. Exploration does no harm, and, if done early, primarily establishes a definite diagnosis and treatment, and, secondarily, gives the surgeon a chance to show what he can do before the case comes to him too late.

DR. S. M. WHITE: In considering the question of the microscopic diagnosis of tissues suspected of malignancy, one of the most important things to be considered is the location of the material for section. In early cases it is often true that material must be secured from a number of places before a true estimate of the condition can be formed, and in this lies one of the dangers in making frozen sections during the course of the operation and in relying upon the results of such examination for further treatment at the moment. By this I mean that it has been my experience frequently, particularly in tumors of the breast, to examine three or four, or more, blocks without finding evidences of malignancy, but on further search through the tissues to find typical carcinoma. It would be difficult to make such extensive search while the patient was under the anesthetic and the surgeon waiting for the report, and for this reason it is often necessary to make only a tentative report, the final report to be made later, and a subsequent operation performed if necessary.

Another point of extreme importance and relating

to this is that when a diagnosis is desired from the laboratory all the material removed should be supplied. Not infrequently a small portion of the tumor is sent in, and unless malignancy should happen to be found here the only report which can be made is "no evidence of malignancy found," and unless this is interpreted with care it may be decidedly misleading, as I have already shown.

DR. R. E. FARR (Essayist): I wish to thank the gentlemen for the interest they have shown in these papers. It is gratifying and instructive to listen to such a hearty discussion.

With regard to the query of one speaker concerning the reason for the more rapid dissemination of malignancy in the young: I think we are indebted to Dr. C. H. Mayo for calling attention to the great activity of the lymphatics in the young, as compared with the aged. In old people these tissues atrophy, and therefore do not offer so much chance for the spread of the disease.

I purposely omitted any reference to the use of the x-ray. Unquestionably, this agent has a place in the treatment of cancer. At this time, however, I question whether it is not doing more harm than good, as its effects are not fully understood, and its application is not limited, as it should be, to the hands of competent specialists.

Every hospital should have at hand apparatus and a competent pathologist so that frozen sections may be made when necessary. Without these accessories we cannot always do that which is actually the best for our patients, though, as Dr. J. C. Stewart says, diagnosis can generally be made from macroscopical appearances.

"Precancerous" may not be a desirable term, but it surely represents an existing condition. There is a

time, in many instances, when a benign is about to change to a malignant condition, and this term, it seems to me, represents that condition fairly well.

DR. CORBETT (Essayist): In closing the discussion I can touch upon only a few of the points suggested. In making frozen sections a great deal depends upon a proper selection of the area to be examined. Blocks taken at random are of no value. To properly select a block we must fall back on our knowledge of gross pathology. That this is not as difficult as might appear is shown by my series of 50 cases correctly diagnosed from a single block. There probably are conditions that cannot be recognized at all by frozen section, but these are not at all similar in clinical appearance to carcinoma or sarcoma.

Unfortunately, the precancerous condition cannot be recognized until cancer has actually appeared. All that can be done at present is to make the earliest possible diagnosis and to extirpate the common sites of cancer, warts, scars, etc., and to eradicate the common precursors, such as gall-stones, ulcer, etc.

This appearance of cancer in localities of lowered resistance naturally suggests the parasitic origin of that condition. On the other hand, attempts have been made to isolate cancer parasites in every possible manner, on a great variety of culture media and under widely differing conditions. All such attempts have been futile. The demonstration of invisible organisms as the cause of contagious epithelioma in chickens at once suggests enormous possibilities; but Jensen has shown that no such organisms could be isolated from carcinoma.

The therapeutic uses of light and the x-ray are still in their infancy. That these rays either stimulate cells or destroy them, according to their intensity, is abundantly proven. Beyond this but little can be said at present.

GASTRIC ULCER AND CANCER*

BY CHRISTOPHER GRAHAM, B. S., M. D.

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In offering this paper to the state association I have in mind chiefly to present the past year's (1905) experience that bears upon the etiological relationship that exists between ulcer and cancer of the stomach.

In the later 90's our attention was strongly attracted by the many long histories of "dyspeptic" trouble that preceded cancer of the stomach; and the thought that ulcer was this precancerous condition became firmly implanted. Since that time this class of cases has been followed out with more or less care, and from time to time placed before you for consideration. Each succeeding year has strengthened our belief, and with the more careful pathological examination of the excised parts we stand to-day on firmer footing.

The clinical histories have not held to so high

a point as they did the first three years, but the average for the whole term is still about 60 per cent. While the clinical evidence falls somewhat, the pathological is quite remarkable.

In 1903 we demonstrated pathologically that 15 per cent of gastric cancers had an ulcer base, and in 1904 this percentage easily reached 18. This, added to our clinical record, was satisfactory to our hypothesis. The year 1905 has presented its clinical proof in a fairly definite manner. A little less than one-half (47-49 per cent) of the cases have histories ranging from 3 to 37 years duration. If to these we add those of two years standing the percentage reaches 61.

Convincing and satisfactory as a long precancerous history may be, it is not necessary that it shall be manifest in order to declare that ulcer was the precursor. First, because cases with short histories and absolute pathological proof are multiplying daily. Secondly, attacks may be

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weeks, months, years, separated and the earlier disturbance quite forgotten in the present severer form. These long periods of latency are quite frequently noted, when carefully developing the history of a present annoying condition. Third, many cases of hemorrhage, perforation, and obstruction have had no previous history whatever, or, if any, but brief and slight, and yet the lesion proved to be ulcer of long standing. Cancerous change may take place in these latent forms, and the first symptoms may be manifested only when obstruction, hemorrhage, perforation, or poisoning has advanced to a decided degree. Fourth, cancers with a history of one to six weeks, yet so advanced that an operation cannot be undertaken, can scarcely be considered as lacking a period of latency of some nature.

In view of the fact that ulcer may, and often does, have a latent period of years, and that cancers with short (manifest) histories frequently do show old ulcer base, it seems just to assume that many, if not all, rapidly developing gastric cancers have found a fertile soil on a previously developed ulcer area.

Though perhaps not yet absolutely demonstrable it seems to me that hyperchlorhydria (or hypersecretion) precedes ulcer, and is a constant causative factor, and that ulcer is the precursor of cancer; at any rate, the histories are often typical of this, and the findings abundant in proof.

In eliciting the history of gastric cancer there are three types found: (1) those in which the initial symptoms were slight, and a long latent period has intervened; (2) those in which the acute symptoms seem suddenly to attack the patient in the very midst of health; and (3) those with a long series of repeated attacks which are evidently precancerous. In the first and third the precancerous history is that of ulcer; what the precursor is in the second, is being determined through surgery and skillful pathological technic.

Basing conclusions on the many histories taken at our clinic, I would distinguish about *four* stages in gastric ulcer development, and would expect cancer when it did develop to appear in the 3d or 4th stage or often to be the 4th stage.

1. In the first stage of ulcer there is unusually good appetite with nutrition at par or even excessive; pain 2 to 5 hours after meals when the stomach is empty or emptying itself; the heartier the meal the longer and more complete the sense of stomach satisfaction, over-active digestion, perhaps some gas and sour eructations; occasional vomiting of small amounts of sour, bitter liquid; stomach, normal as to position and size; excess of hydrochloric acid,—otherwise normal. These patients present themselves to

be relieved of pain which they say comes after meals, but which in reality is premeal pain.

2. The second stage may be established some months later, following several intermissions with recurrences, each increasing more or less in severity; appetite good, though perhaps not above normal; less satisfaction follows the hearty meal; pain is severe and comes sooner after food; distress or discomfort may be present even when so-called pain is absent; gas is usually complained of; sour eructations common; vomiting of sour, bitter acrid fluid, at times mixed with food, is frequent; a sense of relief follows vomiting for a greater or less period; loss of flesh often noted during the attack, either through voluntary or prescribed dieting; rapid gain takes place during intermission; perhaps some dilatation; acidity, high or normal.

3. In the third stage desire for food may remain. It may be fair or decreasing, but the patient is afraid to eat because of distress, pain, gas, vomiting, sour eructations, bloating, or sour, burning stomach; there is but short food relief if any; perhaps obstructive symptoms; loss of flesh and even cachexia may be present. Constipation, marked in all stages, is usually obstinate here. Stomach dilated and prolapsed; hydrochloric acid normal, lessened or even absent; blood may be found during any stage at test-meal, but more frequently here than previously, because, other conditions being equal, the chemical and mechanical powers of the stomach are such that blood destruction (digestion) is retarded.

It is often extremely difficult to mark the distinctive period of transition of the third stage, which is ulcer, into a fourth, which is cancer, so imperceptibly may it take place. Some patients are weak, emaciated, and even cachetic, with ulcer the only lesion (1) if the motor power of the stomach be greatly interfered with, or (2) if the lesion be large and destruction great even in the presence of mild obstruction. Here the transition may begin and though all possible diagnostic means and precautions are taken, yet sometimes a differentiation cannot be made until widespread degeneration removes all hope of cure. But when the clinician is awakened to his important task he will at least reach the point of honest suspicion and call *legitimate* surgery to his aid.

Many times one does find symptoms that offer a basis for differentiation. Pyrosis increases in amount, but is, perhaps, less acute in character. Often on stooping, or during the night, fluid which has some acidity pours from the stomach and awakens the patient; gas, bloating, and a distended discomfort increase. Pain, nausea, and

vomiting are more constant and more often excited by liquid food, but the pain is usually less intense; appetite may persist to quite the end, but as a rule it gradually lessens until finally the patient may turn from food with nausea. Nervousness and languor are combined; weakness and faintness creep on; the patient's ability to exert himself decreases rapidly; anemia may come speedily; the flesh wastes decidedly; a languid air, a paleness about the eyes, nose, and mouth, associated with a pinched expression (a toxemic look) are common. All this points directly to a transition.

The character of the pain changes; it is dull, sickening, more continuous, but not so regular in recurrence, and is more wearing. The severer attacks come at unexpected times—as a rule sooner after food, and are not so acute. There is more relief from eructations of gas and vomiting. The pain is more diffuse and not so often eased by pressure or position. Localization of pain, though not always very definite in ulcer, is much less so in cancer. As in ulcer, if perforation has taken place there may be a wide field of radiation, otherwise the epigastrium is the seat of pain. As cancer progresses diffuseness of pain increases. The diagnosis must, however, occasionally be made in the absence of pain.

Vomiting, always a prominent symptom, usually intensifies as malignancy creeps on. It is more irregular, longer between attacks, more copious (unless there be a contracted stomach from diffuse infiltration), and gives even more relief; the vomitus is rancid, often foul, acid, and obnoxious. All these symptoms vary in intensity according to obstruction and destruction, but the chief characteristic of cancer vomiting is that food taken several hours or even days before, returns poorly macerated and with undigested masses in it, and even this, perhaps, when pyloric obstruction is slight (cancer paralysis). Vomiting is, as a rule, accompanied with less retching in cancer than in ulcer, and blood is more frequently seen, though in small quantities; mucus is perhaps oftener seen, while bile is a rarer accompaniment. If there has been a long period between the ulcer symptoms and the recent cancerous change (Type 1), the diagnosis is usually easier, because of the constancy, the rapid approach, and marked character of the symptoms. There may be a short but persistent period of flatulence, bloating, lessened appetite, and loss of flesh, and then the sudden burst of malignancy so often remarked in the other type (Type 2) that clinicians say attacks the patient in the very height of good health. In these two types we most often meet tumor, and in many other respects are they so similar that we would be led

to consider them counterparts, the early symptoms in the one being overlooked or forgotten by the otherwise healthy individual.

Motor power lessens rapidly as cancer progresses, and if pyloric obstruction is acute and the other symptoms are intense, *dilatation* advances rapidly, organic acids increase, and hydrochloric acid decreases, and blood is more often and more easily detected. Finally, it is the (general) composite pathological picture that the patient presents at the clinic, quite as often as the symptoms he urges upon you that fixes the period when the benign has yielded to the malignant (condition).

4. When we reach the undoubted fourth stage the whole picture intensifies, "and he who runs may read." The appetite is poor, or absent, or even the smell of food may be repulsive. Meats and fats are especially avoided. Emaciation follows rapidly, often more so than can be accounted for by loss of appetite (toxic or perhaps food delay); strength drops from under the patient, languor is intense, and he exerts himself with difficulty; the anemic-cachectic condition develops more and more clearly. The body becomes emaciated, the skin dry, wrinkled, and lemon-yellow. Pain increases and is constant, boring and under-mining, less acute and more sickening; food, if tolerated, almost immediately increases it; frequent vomiting of quantities of poorly macerated and undigested food, rancid and offensive, coffee-ground color; blood more copious, oftener and more easily detected because of the further decreased or absent motor power; sour stomach, sour eructations, and gas become distressing; obstinate constipation, mental depression, extreme languor, cachexia, prolapse, dilatation, tumor, lactic acid fermentation, absence of hydrochloric. When these are present, the condition scarcely remains in doubt.

The picture of cancer where no obtainable precancerous symptoms are elicited or where a long period has elapsed since the symptoms are recalled, is practically that of the late stage of those with long-preceding history. One must be ready to diagnose cancer of the stomach with one or few symptoms, the general condition and pathological picture of the patient bearing out the meager findings.

In our series of cases the males and females ran in proportion of 4 to 1, and ranged in age from 29 to 76 years, the average being a little over 50. About three-fourths of the whole number presented themselves for amelioration of symptoms that had been pressing, for one year or less, that is, previous symptoms have not been so alarming that medical aid had been anxiously sought, or, to put it fairly, malignant manifesta-

tions had been present for only one year or less, the average being a little less than five months. Twenty-three of the number that presented long histories, complained of malignant symptoms only a year or less, the average in this number being a trifle more than five months. This seems to have a significant bearing—the same soil in each instance.

In this series of 1005, pain was rather constant. In 8 the histories did not state either way; one said no pain: the remainder (73) openly declared for pain, most of them complaining rather bitterly.

Vomiting was not recorded in 11 histories; 3 stated no vomiting, while the greater number (68) complained more or less severely. In 42 the lesion was situated at the pylorus or lesser curvature, 3 at the cardia. The location was not recorded in many of the inoperable cases, but the symptoms, for which the operation was undertaken, most often spoke for the pyloric end or lesser-curvature location.

Of the whole number operated upon 67 had test-meals and other routine stomach examinations, chemical and physical. Tumor was present 27 times and doubtful in 3 more. Dilatation present 54, and obstruction 36 times. In 32 free hydrochloric acid was present, ranging from 1 to 50 acidity, combined in 32; lactic 42; fatty 10; both hydrochloric and lactic, found 13 times. Blood was found often. During the last eight or nine months there were but 10 patients in which it was not found at test-meal. The preceding three or four months it was not so often found, doubtless because of less careful technic.

There were 39 cases in which a portion of the stomach was removed and submitted to the pathologist, Dr. Louis B. Wilson, for macroscopical and microscopical examination, a full report of which he has in preparation. I here give in brief the results: in over half (54 per cent; 21 in number) the pathological evidence was good that cancer had developed on an old ulcer base; in one-fourth (25.60 per cent; 10 cases) the evidence was fair that the same was true, while 8 gave no evidence of preceding ulcer irritation. Then in over three-fourths (79.5 per cent) the pathological evidence was good or fair that ulcer was first as a cause. Twenty-one of the 39 had long histories; 14 of which gave good pathological evidence; 6 in which the histories were long, gave evidence considered only fair; 7 cases whose histories range from two months to two years, gave good pathological evidence; and 4, the histories of which covered from one and one-half months to two years, offered fair proof. His-

tories and pathological findings ran together, both positive, in over half (54 per cent) the cases.

The above figures seem to emphasize two points: (1) That short histories and ulcer as the old lesion on which cancer is engrafted are not incompatible, as some argue; (2) that ulcer is the great and fertile soil of cancer.

DISCUSSION

DR. J. W. BELL (Minneapolis): I was not aware that I should be asked to speak upon this subject, consequently I am not prepared, although it is a subject we all have to deal with. For some years I have been convinced that cancer frequently followed, or was engrafted upon, an ulcer foundation. I have held, for many years, that a history of chronic indigestion indicated the existence of a chronic ulcer. I do not believe it indicates this in every case, but I believe it is true of a large percentage of our cases, and it is only logical to believe that ulcer furnishes an excellent foundation for the development of cancer.

I have not had the opportunity Dr. Graham has had to follow these cases after operation, but I feel quite certain that with the excellent opportunities he has had we have no reason to question his findings, and it certainly ought to lead clinicians to be more cautious, and, if possible, to arrive at a decision earlier than we are in the habit of doing in these cases.

An early diagnosis is the thing desired. I am a little surprised at the doctor's want of emphasis in respect to the diagnostic value of a careful history. If I understood him correctly, he would place more emphasis upon the physical examination and the chemical findings, so to speak, than upon the history. It seems to me, in many of these cases the diagnosis of cancer or the diagnosis of ulcer is possible without either a physical examination or a chemical examination of stomach contents; in other words, the history in many cases is sufficient to indicate malignancy. Certainly, where an individual in perfect health suddenly develops symptoms of indigestion, with pain, rapid loss of flesh, and more or less cachexia, that is, if an individual beyond thirty-five or forty develop causeless dyspepsia, the indication is that he suffers from cancer of the stomach, and in my opinion should be subjected to immediate surgical treatment rather than wait weeks or a month until the opportunity for surgical relief is past. I think, in the future, we should place more emphasis than we have in the past upon the history.

DR. CHRISTOPHER GRAHAM (Essayist): In answer to Dr. Bell's point in the discussion, I would say that the clinical manifestations are emphatic, and that there is no way to get at diagnosis of a case unless one does get at it through a careful history of the symptoms as they have appeared. Our method is to go over carefully all the symptoms that can be elicited, past and present, and depend largely upon such history for our diagnosis. This point perhaps I did not lay enough stress on in this paper, but formerly I have been emphatic on this point. In order to make a correct diagnosis, your history must be carefully and correctly developed—a history of spells of disturbance, with intervals of part or perfect ease with the many other manifestations of the disorder. I agree with Dr. Bell, that this carefully developed history is the all-important part, and is worth ten times all else put together.

AN ALLEGED NEOPLASM*

BY WM. N. PORTEOUS, M. D.

MINNEAPOLIS

The medical journals of America have been repeatedly exploited of late with articles, *ardentia verba*, upon the best and only desirable method of removing the tonsil. Total extirpation is the dictum of these authors, and it is based primarily upon the denial of a function in the tonsil which admittedly they do not understand; and, secondarily, upon the plea that the tonsil is a port of entry for invading microorganisms, and should therefore be totally destroyed. Admitting an imperfect knowledge of its functional qualities, and the standing invitation to microbial guests, which its enlarged crypts give, we may yet refuse to accept without grave consideration the *ipse dixit* of these authorities upon the neoplastic character of this long-suffering gland.

In the old Greek legend they who denied the gods drew the answer of their thunderbolts, and the lesson still lives for us lesser men. We flaunt nature with her seeming blunders, and she returns to us, with reversed edge, the boomerang of our rebuke. We extirpate the tonsil, and the disastrous results which ensue suggest to us the uses of the organ we have so radically removed.

We are reminded of the meaning of the term *tonsil*, a word which is derived from the Latin *tonsilia* or "mooring-pole." Whatever may be said for or against the secretory function of this so-called gland, we receive at once a hint of its place and purpose in the architecture of the throat. It forms a block which is bounded by, and which separates, the palatoglossus and the palatopharyngeus, forming the anterior and the posterior pillars of the fauces.

A case in illustration of the fact: A fellow specialist consulted the writer with regard to operation upon one hypertrophic tonsil, some of whose ports of entry were filled with detritus, which had doubtless infected the glands of the neck and induced a constantly hypernormal temperature. Partial removal of the tonsil was advised, but the professional patient desired its complete enucleation. The writer advised consultation with another surgeon, which was had, and a most complete, and in itself satisfactory, operation was done by him. The healing process advanced favorably, but was hardly completed when the patient became alarmed over the increasing huskiness and decreasing resonance of his voice. Examination of the vocal chords showed nothing amiss except the presence of a profuse secretion and the evident dripping of

this secretion into the larynx. Inspection of the pharynx revealed the fact that the anterior and posterior pillars were joined or tied most completely by cicatricial tissue, while the velum was contracted and drawn to one side. The function of deglutition was evidently impaired.

The writer recently saw another patient from whom an eminent surgeon of a neighboring city had completely removed both tonsils. Contraction and adhesion of the pillars of the fauces, with narrowing of the isthmus and dripping of secretion into the larynx, had resulted. A. A., a young lady who was a singer of some local repute (note the past tense), had suffered for a long time with attacks of acute tonsillitis. The writer himself advised the removal of both tonsils. Fortunately, the patient declined the operation, but later she was prevailed upon to accept operation at the hands of another and, doubtless, abler surgeon. As consequences, the faucial pillars were bound and contracted, the larynx was in a state of continual irritation, and her voice had become practically useless.

For these lamentable results in such a case there is no remedy. In a word, this so-called neoplasm, fitted into its place between the glossus and the pharyngeus, preserves the downward pathway of deglutition and at the same time the upward path along which vocal sound waves are transmitted to the sounding-board of the nasopharyngeal vault. It is, in fact as well as in name, the mooring-pole of the upper part of the pharyngeal funnel. Other and secretory functions it may possess, of which we know little or nothing. Ports of entry it may present under its frequent pathological conditions to infective organisms, and it may be, and often is, desirable to dredge, cleanse, or seal those ports to diminish their avenues of invitation, but there is little common sense and less science in ripping out the whole harbor in order to accomplish that result.

One surgeon, at least, is convinced of the dangers of this annihilatory practice; is determined that, in his own future at least, a part of this physiologic mooring-pole shall be left. In his earlier experience he had frequently removed the entire tonsil and with varying measure of usually, although perhaps not invariably, unfortunate results. He finds a careful dissection of the redundant gland a more conservative and a more successful method of operation, and the saving in situ of at least a segment or lower third of the tonsil,—a safety point of practice.

*Read before the Hennepin County Medical Society, Nov. 5, 1906

CLINICAL MICROSCOPY

CONDUCTED BY GEORGE DOUGLAS HEAD, M. D.

DIFFERENTIAL LEUCOCYTE COUNT IN SEPTIC INFECTIONS

Under the title, "The Value of the Differential Leucocyte Count in Diagnosis," in the December number of the American Journal of Medical Science, F. E. Sondern gives a resume of the work done by various observers upon this subject since the publication of his conclusions, in May, 1906.

In his paper read before the surgical section of the New York Academy of Medicine Sondern came to the following conclusions: The increase in the relative number of polynuclear cells is an indication of the severity of the toxic absorption, and the degree of leucocytosis is an evidence of the body resistance toward the infection. Within reasonable limits the figures obtained would justify an inference as to the probable presence or absence of pus, purulent exudates being rarely present with low polynuclear percentages irrespective of the height of the leucocyte count.

Gibson (Annals of Surgery, April, 1906), investigating the blood in 200 cases at St. Luke's Hospital, New York, came to the following conclusions: The differential blood-count and its relation to leucocytosis is the most valuable diagnostic and prognostic aid in acute surgical diseases furnished by any of the methods of blood examination. It indicates fairly consistently the existence of suppuration or gangrene, as evidenced by an increase of the polynuclear cells disproportionately high as compared with the total leucocytosis.

H. C. Taylor, in a study of several hundred gynecological cases at Roosevelt Hospital, comes to the same conclusions.

In reviewing J. F. McKernon's observations in 200 hospital and private cases, Sondern mentions that in McKernon's investigation it was shown that suppurative bone processes do not give as distinctive findings as other suppurative conditions. The author himself also states that in children the results are not as uniform as in

adults. As a reason for this exception to the rule in some children he states that the normal polynuclear percentage in children is a more variable quantity than in adults, and that a fall in the polynuclear percentage may be due to a lack of ability to absorb additional toxic material. Sondern further admits that when pus is so confined that no toxic absorption occurs or when a purulent exudate is the result of tuberculous or typhoid infection alone there is no leucocytosis and no polynuclear increase.

Mixed infection with tubercle bacilli or typhoid bacilli does not show the high polynuclear percentages obtained in staphylococcic or streptococci infection.

It really looks from these admissions of Sondern as if this new method of more surely detecting the presence of a purulent infection may stumble and fall over the same obstacles which caused the leucocyte count in clinical diagnosis to be discarded by those clinicians who looked for some specific diagnostic sign of pus and failing to find it in this procedure gave up its use entirely. Probably in this newer procedure, as in that of the leucocyte count, more extended observations will reveal exceptions which must be borne in mind when employing it as a diagnostic aid.

While having but a very limited experience with this study of the polynuclear percentages the writer has made a large number of leucocyte counts in a great variety of diseases, and is of the opinion that many of the so-called exceptions to the well-known rules are due either to faulty technic or to blood examinations made so late in the course of the disease that the distinctive leucocyte picture had been obliterated. The fact, too, that to differentiate leucocyte count is a procedure requiring considerable time, while making a leucocyte count requires only a few minutes, will tend to make the latter method more generally employed as an initial clinical test to be followed later on by the differential count in the still doubtful cases.

FREEZING POINT OF BLOOD AND URINE IN
PNEUMONIA

In the *Journal of A. M. A.* of September 23, 1905, F. E. Schmidt reports the results of his extensive investigations upon the freezing point of the blood and urine in pneumonia. The work was undertaken with the special object of ascertaining the relation of such findings to the course of the disease and the prognosis.

The article includes a very complete historical resume of cryoscopy, and the author describes a new method for making the test. His conclusions are as follows:

1. There is absolute lowering of the freezing point of the blood in pneumonia.
2. The freezing point lowering of the blood depends in some way either on the extent of the consolidation of the lung or on the height of the temperature, or both.
3. The lowering of the freezing point is greater than would be accounted for by the increased viscosity of the blood due to deficient aeration in the lungs.
4. The concentration of the blood increases, as shown by the lowered freezing point up to the time of crisis and for several days thereafter.
5. In those cases where the heart weakens perceptibly the freezing point of blood becomes lower. In fatal cases in which the heart gives out the freezing point of the blood is extremely low.
6. The lowered freezing point of the blood is apparently not due to deficient kidney function.
7. The freezing point of urine in pneumonia is also lowered.
8. The lowering is greater than would be accounted for by a mere concentration of normal urine.
9. The freezing point of the urine times the number of cubic centimeters voided is increased.
10. The quantity of urine is decreased, whereas the freezing point is lower.
11. The lowering of the freezing point of the urine is not due to chlorides, but to metabolic molecules excreted.
12. The specific gravity of the urine is not an accurate index of the concentration of the urine.
13. The freezing point of the urine bears no constant relation to that of the blood normally.

MEMORIAL OF DR. R. J. FITZGERALD

Reynald Juan FitzGerald, son of C. C. FitzGerald and Maria Gomez FitzGerald, was born in Chinandagua, Nicaragua, Central America, September 13, 1860, and died in Minneapolis, August 18, 1906.

At his mother's death, when he was six years old, he, with his brothers George Edward and Don Felipe and his sister Teresa Maria, was brought north, and was then sent to Seabury Academy, Saybrook, Conn., for several years, and from there to Clavrack College, near Albany, New York, where he, was graduated in 1878. In 1882 he was graduated from Albany Medical College, and came to Minneapolis the same year.

He became a member of the Minnesota National Guard in 1882, and held various offices in that organization until he was finally made medical director of the state with the rank of lieutenant-colonel.

When the Spanish-American war broke out he volunteered his services, and, the office of medical director not being provided for by the general government, he was commissioned major-surgeon of the Thirteenth Minnesota Volunteer Infantry, and as such accompanied his regiment to San Francisco and thence by transport to Manila, P. I.

Before the regiment landed in the Philippines he was detached and assigned to the First Reserve Hospital as chief operator, which position he held during his entire sojourn, of a year, in Manila. While he filled this very important position during both the Spanish-American war and the Philippine insurrection, he performed over 2,500 operations, won the undying gratitude of the thousands of soldiers, sick and wounded, who passed through his hands, and the respect and commendation of his superiors and officers associated with him.

During his sojourn in the great First Reserve Hospital he lived in a bungalow quartering the staff of the hospital. This, with the usual Spanish indifference to sanitation and proper hygienic surroundings, a one-story building, was built on the edge of a malarial marsh and within the environs of the hospital proper.

Overwork, anxiety, unhygienic surroundings, a hernia sustained while lifting a wounded man, and an unkindly climate,—all contributed in laying the foundation of the disease from which he finally met his death, namely, chronic nephritis.

When his regiment was ordered home he rejoined it, and returned to America by way of Japan. Upon the reorganization of the national guard he accepted the position of major-surgeon of the First Minnesota, which rank he held at his death.

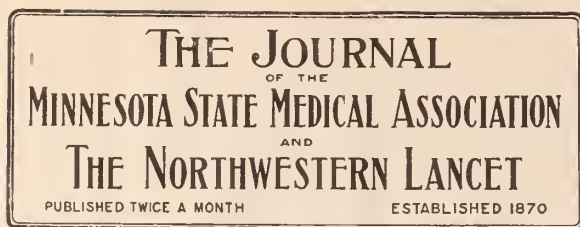
His failing health precluded his attending to his practice for more than a fraction of the time, and he journeyed north and south in an effort to regain his vigor.

Dr. FitzGerald was a member of the American Medical Association, the Hennepin County Medical Society, the State Medical Society, and the Association of Military Surgeons. He belonged to Minneapolis Lodge No. 19 of Masons; also to Minneapolis K. P. No. 1, as well as to several fraternal organizations.

Dr. FitzGerald is survived by his wife, Eleanor Bradley FitzGerald, to whom he was married in 1903, his sister, Mrs. Josephtha Bright of Tennessee, his brother George of Texas, and Dr. Don of Minneapolis.

In accordance with the Major's wish he was accorded a military funeral, and followed to the grave by a military escort, muffled drums, and his comrades in arms, and laid to rest from under the folds of the flag he loved so well, and bade to slumber by the sobbing notes of the bugle with the soldier's requiem, taps.

A. A. LAW, M. D.



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SOLANIN IN EPILEPSY

Dr. William F. Waugh, in a paper read before the Section on Pharmacology and Therapeutics of the A. M. A., June, 1906, and published in The Journal of the A. M. A., November 3, 1906, gives an interesting description of this new drug.

Solanin is an alkaloid found in several species of solanaceae, and especially in the young shoots of the potato and tubers that have grown while exposed to direct sunlight and those that have sprouted. At some period in the growth of the potato the deep layers of the skin contain enough solanin to cause toxic symptoms. Rotting potatoes contain large quantities of solanin, and the young buds contain enormous amounts.

Solanin is less depressing in every way than the bromids, and is useful in a large number of diseases in which the bromids are employed—in scaly skin diseases, rheumatism, acute respiratory ailments, and as an aphrodisiac; for nervous erethism, hyperesthetic states, asthma, and whooping cough; cachexias, lymphatic stases, jaundice, and other cases in which the excretory passages are obstructed by debris; menstrual suppression from cold cystitis, pudendal pruritus, feeble capillary circulation with cold extremities, delayed or recedent eruptions, and epilepsy.

It is said to be useful also in many affections of the nervous system in which pain and spasm are predominating symptoms. The use in epilepsy is particularly interesting as it does not produce the undesirable action of the bromids. Depression of the sexual function, and acne are frequently due to the bromids, as many practitioners have learned to their sorrow. Solanin does not cause either of these symptoms, as it acts less upon the cerebral cortex and more upon the spinal cord by lowering its reflex irritability.

With a chemically pure alkaloid the average adult dose is 1-12 grain, and as yet it has not been found necessary to exceed one grain per diem. Should an over-dose be taken the symptoms are a burning sensation in the throat, followed by an oppression of breathing. The antidote is lavage, strong tea or coffee, external heat, and hypodermics of strychnia.

The dose for children should be regulated in the usual manner. In all cases it is necessary to push the dose until unmistakable constitutional effects are secured, the remedial action lying close to the limit of beginning toxic action.

A NEW REMEDY FOR EXOPHTHALMIC GOITRE

Dr. Robert T. Legge, of McCloud, Cal., reports several cases of exophthalmic goitre in which he used diphtheria antitoxin with curative results.

Dr. Adrian F. Burkhard, of Omaha, reports a case in which he used the antitoxin, an injection of 3,000 units. After five weeks the tumor has almost disappeared and the circumference of the neck diminished almost one and one-half inches. The pulse-rate fell from 135 to 80; the tremor, which before the injection was very marked, is now almost imperceptible; the exophthalmos can no longer be detected; the nervousness and weakness have disappeared; and no untoward results have followed. Following this report four other cases with the same treatment were reported. In three of these cases the results were good or excellent, and in one case no marked improvement occurred after several injections.

This use of antitoxin is interesting, and suggests the possibility of auto-intoxication as a positive factor in the production of Graves' disease. The introduction of a new substance into the blood-stream and the effect upon the sympathetic system may do something to clear up the theories as to cause and effect in exophthalmic goitre. The experiments of Beebe and Rogers with a specific serum made from thyroid glands, attracted wide attention, and this line of treatment is still in the experimental stage.

The surgical treatment in which the whole or a part of the gland was removed has been followed by favorable results in a large number of cases, but after all the surgery and injection methods there still remain a large number of patients who are only improved or retain their cardinal symptoms. Whatever the method of treatment the individual must be reckoned with. Before the advent of surgical removal of the glands and the injection method, patients with exophthalmic goitre recovered or improved according to the tendencies of the individual. The fulminating cases die in spite of any procedure, and the accidental or transient forms disappear under rest and improvement in hygiene and the elimination of general toxins. The selection of cases for surgery or injection requires fine discrimination on the part of the practitioner, and no rule can be formulated that will accurately determine which of the methods will be followed by recovery unless the nervous system be carefully studied. The intoxication theory in certain individuals holds good; the long-continued case belongs essentially to the surgeon.

This is an age of experimentation, and the outcome of the various forms of exophthalmic goitre will depend upon the method of study rather than upon the method of treatment.

TWIN CITY MILK SUPPLY

The twin cities, Minneapolis and St. Paul, have enacted ordinances that will improve the quality of the milk consumed by the people of both cities, and, incidentally, will stimulate the smaller cities and towns of the Northwest to the needs of good, clean milk. The ordinance passed by the City Council of Minneapolis, May 25, 1906, and one similar in kind passed by the City Council of St. Paul in November, will prevent the shipping of unclean or adulterated milk by country dealers and will regulate the handling of milk in transit and at the dairies.

The ordinance provides for the inspection of all kinds of vehicles that convey milk, and demands that the source of origin of all milk shall be carefully tabulated. Each cow must be inspected and tagged for identification, and pass the tuberculin test. The words "adulterated milk," as used in the ordinance, mean, first, milk containing more than 87 per centum of water; second, milk containing less than 13 per centum of milk solids; third, milk containing less than three and one-half per centum of fats; fourth, milk drawn from animals within fifteen days before or five days after parturition; fifth, milk drawn from animals fed on distillery waste, or any substance in a state of fermentation or putre-

faction, or on any unwholesome food; sixth, milk drawn from cows kept in a crowded or unhealthy condition, or from cows suffering from tuberculosis or any other contagious disease; seventh, milk from which any part of the cream has been removed; eighth, milk which has been diluted with water or any other fluid, or to which has been added, or into which has been introduced, any foreign substance whatsoever; ninth, milk the temperature of which is higher than 50 degrees Fahrenheit.

Skimmed milk may be sold, but it must be so labeled. Adulterated milk may be seized and destroyed by the inspector, and the same ruling applies to cream. The Health Department, through its deputies or inspectors, has full authority to inspect milk at any time when milk is offered for sale.

Violators of this ordinance may be fined from ten dollars to one hundred dollars, or be imprisoned until the fine is paid. The Health Department of Minneapolis has already secured several fines of one hundred dollars, and scarcely a week passes without the arrest of an offender. The Municipal Court is in full sympathy with the ordinance, and as the offense is so common, the newspaper reporters do not often advertise the fact. If more publicity were given, with names and addresses of the violators of the ordinance, it would not be difficult to improve our milk supply.

Heretofore too much attention was paid to the possibility of the communicability of tuberculosis, and too little attention was given to the securing of clean milk. The farmers, dairymen, and creameries are making an effort to keep within the meaning of the law, at the same time they are looking out for their own interests.

The use of separators is common among the large and small country shippers, as well as the supply-houses in the cities. The separator cleans the milk of dirt, but also separates the cream from the milk. The dealer now tests his separated milk, and then adds enough cream to conform to the requirements of the ordinance; the rest of the cream is profit. The milk is good, but the consumer does not get all there is coming to him from the cow. The net result is a cleaner milk, but not what it should be.

Under the circumstances certified milk is out of the question. Better milk and perhaps clean milk is all we can hope for until the education of the farmer as a producer, and the public as the consumer, is completed.

Vigilance, inspection, and fines or imprisonment are the safeguards of the people, and will diminish the death-rate among children.

REPORTS OF SOCIETIES

HENNEPIN COUNTY SOCIETY

At the mid-monthly meeting 45 members were present, and Dr. Todd, the president was in the chair.

Dr. A. A. Law read a memorial on the life of the late Dr. R. J. FitzGerald, and upon motion it was ordered published in *THE JOURNAL-LANCET*.

(See page 541.)

Dr. J. W. Bell moved that the fee-bill be taken up at 9 o'clock, and that three minutes be allowed to each member for discussion.

It was considered item by item, and after a few changes was adopted.

Dr. C. J. Spratt read a paper on "The Investment of Earnings," and the same was discussed by Drs. Schefcik, Staples, Phillips, Hill, Litzenberg, Norred, Bell and the essayist.

A vote of thanks was tendered Dr. Spratt for his paper and it was voted to have the paper published in *THE JOURNAL-LANCET*.

A committee was appointed upon motion of Dr. G. F. Beachler, to draw up and have posted the delinquent list.

The regular meeting of the Society was held on December 3d, the president in the chair, and 80 others present.

The following were elected to membership: Dr. Svan Sivertson, Hamline, '04, 1034 Andrus building, and Dr. J. Fowler Avery, U. of M., '99, 465 Auditorium building. The following were nominated for membership: Dr. H. G. Franzen, Dr. James D. Reynolds, and Dr. J. G. Erickson.

The president appointed the following as a committee to take charge of the anti-tuberculosis exhibit for the meeting in this city next month: Drs. Cross, Bell, Barber, Corbett, and McCollom.

Officers for the ensuing year were nominated as follows: President, Dr. J. E. Moore; vice-president, Dr. A. T. Mann; executive committee, Dr. W. R. Murray and Dr. F. A. Knights; censors, Dr. A. B. Cates and Dr. Geo. D. Head; trustees, Dr. F. A. Knights and Dr. J. G. Cross; delegates to the State Association, Dr. F. C. Todd, Dr. A. E. Benjamin, Dr. J. M. Lewis, Dr. G. D. Haggard, and Dr. C. H. Hunter; alternates, Dr. C. H. Bradley, Dr. J. W. Bell, Dr. D. O. Thomas, Dr. A. T. Mann, and Dr. J. A. Crosby.

The scientific program being in order Dr. A. S. Hamilton read a paper with the title "Typhoid Fever in the Aged." The discussion was opened by Dr. J. M. Lewis, who was followed by Drs. Head, Bell, Rees, Phillips, and Hamilton.

Dr. L. W. Day read a paper on "Recent Views of Bright's Diseases." Dr. Head opened the discussion, and Dr. Day followed. Dr. J. E. Moore read a paper on "Surgical Diagnosis." The paper was discussed by Drs. Norred, Benjamin, Jones, Mann, and Moore.

The president announced the program for the next mid-monthly meeting as follows:

"Uses of the Medical Library," Dr. J. C. Litzenberg; "Ulcer of the Stomach," Dr. G. D. Head.

C. H. BRADLEY, M. D., Secretary.

THE STEARNS-BENTON SOCIETY

The Stearns-Benton Society held a very interesting meeting November 15. The general topic was typhoid fever. Papers were read as follows: by Dr. Moynihan, of Sauk Center, on the "Etiology and Pathology;" by Dr. Hubert, of St. Cloud, on "Symptoms and Diagnosis;" by Dr. J. H. Beaty, on "Prognosis and Treatment," and by Dr. Beebe, on "Complications and Sequellæ." A thorough discussion followed these papers.

The program for next meeting will be lobar pneumonia.

J. H. BOEHM, M. D., Secretary.

CENTRAL MINNESOTA SOCIETY

The annual meeting of this society was held at Mora, Wednesday evening, November 21. Dr. J. F. Whiting, of Spencer Brook, was in the chair.

The following officers were elected: President, Dr. H. P. Bacon, Milaca; vice-president, Dr. W. S. Titus, Mora; secretary-treasurer, Dr. A. J. Lewis, Mora; censors, Drs. S. H. Olsen, Milaca, H. C. Cooney, Princeton, J. F. Whiting, Spencer Brook.

Meetings for the ensuing year will be held at Milaca, Princeton, and Mora.

Dr. S. H. Olsen, of Milaca, read a paper entitled "Headaches;" Dr. H. C. Cooney, of Princeton, read a paper on "Surgical Treatment of Acute Suppurative Peritonitis;" and Dr. Chas. Swenson, of Braham, a paper on "Symptoms and Treatment of Gall-stones, with Report of 17 Cases Operated Upon by the Writer."

At the close of the meeting the members partook of luncheon and enjoyed a smoke social.

The next quarterly meeting will be held at Milaca, Wednesday, March 13, 1907, from 11 a. m. to 4 p. m.

A. J. LEWIS, M. D.,
Secretary-Treasurer.

NEWS ITEMS

Dr. G. Opplinger, of Warroad, has moved to Beaudette.

Dr. Carl D. Kolset has moved from Wendell to Audubon.

Dr. F. C. Wheat has moved from Ellsworth to Marshall.

Dr. W. H. Cuthbert, of Iowa, has located in Canton, S. D.

Dr. L. A. Moore, of Tower, has moved to Kewanee, Ill.

Dr. Hermanus DeBoer, of Chicago, has located in Edgerton.

Dr. T. J. Kinnear has moved from Eveleth to Springfield, Ill.

Dr. Theo. Breck, of Windom, is in New York doing post-graduate work.

Drs. K. J. Lee and O. T. Sherping, of Fergus Falls, have formed a partnership.

Dr. W. C. Chambers has been elected physician of the State School at Owatonna.

Dr. Charles Lindberg, a 1905 Hamline graduate, will locate at Fairdale, N. D.

Dr. J. M. Edwards and Miss Clara E. Gerlich, of Mankato, were married on the 5th inst.

Dr. E. F. Swarthout, of Sysketon, N. D., was married last month to Miss Rose Falk, of Heaton, N. D.

Dr. Clinton Smith, of Devils Lake, N. D., was married last month to Mary M. Brennan, of the same place.

Dr. H. A. Maillett, of Butte, Montana, was married last month to Miss Elvira Richeo, of St. Hyacinthe, Canada.

Dr. Alexander MacDonald, of Morrystown, who formerly practiced at Austin, has returned to that place for practice.

Dr. Frank J. Lexa, a recent graduate of the College of Physicians and Surgeons of Chicago, has located at New Prague.

Dr. G. W. Young, of Phillipsburg, Mont., is in St. Mary's Hospital, Rochester, for treatment of serious abdominal trouble.

Dr. J. E. Corrigan, of Canton, S. D., will move to Sioux Falls, S. D., and be associated in hospital work with Dr. W. Dunham.

Dr. Henry Wiedow, of Worthington, has re-

turned from a six months' trip abroad. He was accompanied on his trip by his wife.

Dr. George McCullogh, who has been practicing at Motley since graduation from Hamline in 1903, has moved to Wheatland, N. D.

Dr. James Semple, of Langdon, N. D., will spend the winter in Chicago doing post-graduate work, and may not return to Langdon.

Dr. John J. Whyte, of Bertha, has purchased the practice of Dr. L. A. Miller, of Wauconia, Iowa, and is now located in that place.

Dr. E. Klavness, of Brookings, S. D., who spent the summer practicing in Bristol, in that state, has located in Sioux Falls, S. D.

Dr. Sansing, who has been assisting Dr. Platon, of Valley City, N. D., will be associated with Dr. A. W. MacDonald, of Courtenay, N. D.

Dr. A. S. Eggers, of Grand Forks, N. D., who has been spending several months in Norway, has returned, bringing with him a bride.

Dr. D. W. Craig, of Sioux Falls, S. D., recently went to Chicago for a serious stomach operation, which gives his friends great concern.

Dr. W. J. Mayo was made the guest of honor of the University of Pennsylvania while on a visit there a few days ago where he gave a lecture.

Dr. H. H. Wilcox, of Albert Lea, has been appointed surgeon-in-chief of the National Soldiers' Home, at Hot Springs, S. D. He will take to his new post, Miss Lura Hydorn as his bride.

The Graduate-Medical School of Chicago gives a special course during the month of January which allows the physician to select from the regular work of the school such subjects as he desires to take.

Dr. E. W. Hills, who represents the so-called British physicians in Winona, has been cited to appear before the State Board of Medical Examiners to show cause why his license should not be cancelled.

Dr. W. A. Angell, who has been practicing at Canby for a number of years, and who spent a year abroad in special study, after leaving Canby, has located in Minneapolis, with offices at 213 Pillsbury building.

Dr. E. E. Bigelow, of Owatonna, has resumed practice which he gave up on account of his health. Before beginning work again he took a post-graduate course at Ann Arbor where he was graduated in 1867.

The president of the Wright Hospital, of Fergus Falls, shows the money value of a hospital to the city in the single item of expenditures.

He says the hospital has spent over \$500 a month with the local merchants, and most of the money comes from outside the city. A hospital will pay any city.

The Montana State Board of Medical Examiners has been engaged in a battle royal with three "advertising" doctors of Butte. Drs. J. C. Hunter and A. C. Dogge were acquitted, no proof being furnished that they inserted the objectionable advertisement. Dr. F. Grattan admitted that he inserted the advertisement and his certificate was revoked. The case will be appealed.

Badger has a new doctor-professor who gives in the local paper the following announcement of his ability: "Prof. Isaac F. Hall, a graduate from the Weltmer School of Healing of Nevada, Missouri, has taken rooms over the postoffice in Badger. Prof. Hall will treat every known disease and will cure every case, where the patient wants to be cured with the degree of earnestness as will insure a cheerful compliance with the necessary conditions."

The Minnesota State Graduate Nurses' Association has been incorporated, and will endeavor to gain to its membership all the graduate nurses of the state, of whom there are between five and six hundred. The officers are as follows: President, Mrs. A. R. Colvin, St. Paul; first vice-president, Miss Mary Woods, St. Paul; second vice-president, Miss Edda Knox, Duluth; secretary, Miss Marie L. Jamme, Minneapolis; treasurer, Miss Grace Holmes, St. Paul.

The Blue Earth County Society gave the members of the Brown-Redwood Society a banquet at Mankato on December 3. Several papers were read, and all had a good time. The societies passed a joint resolution favoring a suitable appropriation by the next legislature for the State Sanitarium at Walker. Most of the members of the Brown-Redwood Society remained in Mankato for the meeting of the Minnesota Valley Association.

The Mitchell District Society, of South Dakota, met in annual session at Mt. Vernon, S. D., on December 5. Papers were read by Drs. C. A. Bower, B. A. Bobb, Fred Winty, Fred Trenon, and F. W. Fryberg. A banquet was given the society by the physicians of Mt. Vernon. The following officers were elected for next year: President, Dr. T. B. Smiley, Mt. Vernon; vice-president, Dr. R. C. Warne, Mitchell; treasurer, Dr. F. W. Freyberg, Mitchell; secretary, Dr. E. F. Reamer, Mitchell.

The Minnesota Valley Association held its twenty-seventh annual meeting in Mankato, on December 4, with a large attendance. Dr. M. Sullivan, of Adrian, presided. A large number

of excellent papers, some of them models of length and pointedness, were read and discussed. The following were elected officers for the next year: President, Dr. A. O. Bjelland, Mankato; first vice-president, Dr. L. A. Fritsche, New Ulm; second vice-president, Dr. H. B. Grimes, Lake Crystal; treasurer, Dr. G. F. Merritt, St. Peter; secretary, Dr. A. G. Liedloff, Mankato.

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Doctor: If you want practical post-graduate work during the fine season in the delightful city, write for particulars, to New Orleans Poly-clinic, post-graduate department of Tulane Medical College, P. O. Box 797.

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The medical library (standard works) and instruments of the late Dr. F. C. Poehler. Write to or call upon Mrs. F. C. Poehler, Flat 4, 2220 Emerson Ave. So., Minneapolis.

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