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A CRITICAL REVIEW OF OPERATIONS FOR VENTRO-SUSPENSION OF THE UTERUS.*

By S. M. HAY, M.D., C.M., Gynæcologist,, Toronto Western Hospital.

MR. President, Ladies and Gentlemen,—That retro-deviations of the uterus are among the most common conditions found in gynecological patients is well known.

The combined observations of Winckell¹, Lohlein and Sängner, embracing several thousand patients, show this condition to occur in 17.74 per cent. of all patients of this class. Other authorities place the percentage all the way from 15 to 33.

It might be well to start out early in the consideration of this subject with the fact clearly before us that simple uncomplicated retro-displacements of the uterus frequently cause no symptoms, and that, in the great majority of cases, coexisting pathological conditions are crying more loudly for relief than the uterine malposition.

Although the etiology of retro-deviations of the uterus and the physiological function of the various uterine ligaments are quite beyond the scope of this paper, still I feel justified in referring briefly to them, as a correct conception of these two important points is absolutely necessary in order that we may intelligently consider the various operations in vogue for the relief of this often troublesome condition.

ETIOLOGY.

H. C. Coe², of New York, says that aside from neoplasms, the principal cause of departure from the normal position of the uterus, as well as for the distressing symptoms which accompany this change of position, is not overweighting of the uterus, nor in relaxation of its ligaments, nor in weakening of its pelvic supports, but is rather due to atony of the general abdominal and pelvic musculature. Some women carry large uterine myomata without any pressure symptoms. On the other hand, a flabby young woman may get up in three weeks from an easy labor and a perfectly normal convalescence, without evidence of puerperal lesions or subinvolution, but yet retroversion is present and is accompanied by such dragging and bearing down pains that the woman is a semi-invalid. This is from a general loss of tone and not from the local condition.

*Read at the Ontario Medical Association, 6th, 7th and 8th June, 1905.

Many women who have perineal lacerations and a moderate prolapse of many years' standing do not consult a gynæcologist until after the menopause, this is due to the general loss of muscular tone at that period. All the uterine ligaments, of course, participate in this general loss of tone.

UTERINE LIGAMENTS.

When we study human anatomy, we find that the principle Nature has applied to hold the various organs in place is that of suspension by ligaments. Briefly reviewing the organs of the human body, namely, the heart, the lungs, the liver, the spleen, the pancreas, the kidneys and the intestines, we readily admit that they are hung by ligaments from the bony framework of the body. Not one of them is held in place, or receives support from anything placed beneath it. The ovaries and fallopian tubes hang on the posterior surface of the broad ligaments by *their ligaments*. Reasoning by analogy, and basing our conclusions upon the uniformity of Nature's laws, the logical inference is that the uterus is held in place by its ligaments, and, weight for weight, no other organ in the body has so many ligaments.

That these ligaments are compelled to support the uterus is clearly demonstrated by the fact that, when the supporting power of the floor of the pelvis is absolutely destroyed by the perineum being torn clear through into the rectum, the uterus remains in place. The only exceptions to this rule are found in cases in which the uterus is displaced and dragged down by complicating conditions that overcome the resisting power of the ligaments.

The chief action of the round ligaments is not suspensory, but rather to guide and limit the excursions of the fundus. In their quiescent state they hold the fundus to the front and thereby secure the impingement of the intra-abdominal pressure upon the *posterior* surface of the uterus. With an overful bladder the fundus uteri is carried quite to the promontory of the sacrum and the intra-abdominal pressure is found to impinge upon the *anterior* surface of the uterus. The round ligaments prevent the uterus from being gradually crowded down into a permanent retro-displacement.

The main functions of the broad-ligaments are to furnish supports for the uterine appendages which are hung upon its posterior face, and to furnish safe conduct to the blood vessels in their course to the uterus.

The chief purpose of the utero-sacral ligaments, if not their sole function, is to retain the uterus in its normal position. The two sets of ligaments, the utero-sacral and the utero-vesical taken together, form a sling of tissue, reaching from the promontory of the sacrum to the symphysis, in which the uterus hangs suspended by their attachments just above the internal os. The utero-sacral ligaments prevent descent of the uterus as a whole, while the utero-vesicals control the to-and-fro, or antero-posterior, motion.

VARIOUS OPERATIONS.

A great many operations, some 50 in number, have been devised for correcting retro-deviations of the uterus. Some of these are worthy of mention, although many of them have practically fallen into disuse.

The operations of vaginal fixation of the uterus, operations upon the anterior and posterior vaginal walls, and operations done *through* the anterior and the posterior cul-de-sac on the utero-sacral ligaments and the round and broad ligaments, do not properly come within the range of this paper so will only receive a passing notice.

We now come to the consideration of the two most reliable operations employed for the relief of these backward displacements of the uterus, the two which have successfully stood the test of time and experience, and the two which receive greatest prominence in our most recent text-book literature. I refer to (1) Alexander's operation of shortening the round ligaments and to (2) ventro-suspension of the uterus. Most, if not all, of the other operations are only on probation, while many have been distanced in the race or fallen by the way side.

Bland Sutton⁴ in the 1904 edition of his work says, "*Hysteropexy* and the operation for *shortening the round ligaments* are the two principal methods of dealing with this condition."

Penrose⁵ in his work of 1904 says, "The two operations that have deservedly met with the greatest favor are *ventro-fixation* or *ventro-suspension* of the uterus and Alexander's operation."

Dudley⁶ in his book of 1904 mentions (1) Alexander's operation, (2) abdominal hysterorrhaphy, and (3) vaginal hysterorrhaphy.

Garrigues⁷ in his Gynæcology of 1905 only mentions (1) Alexander's operation, (2) vaginal shortenings of the round ligaments, (3) shortening of the round ligaments from the abdominal cavity, and (4) ventro-fixation, or suspension of the uterus.

Montgomery⁸ in his text book of 1900 says, "The operations for the correction of the retro-displacements of the uterus consist in manipulation of the natural ligaments, such as the shortening of the round ligaments, which may be *extra-peritoneal* or *intra-peritoneal* ventro-fixation of *suspension* of the uterus, and *vaginal operations* for fixation.

Reed¹ in his text book on Gynecology of 1901 includes the various operations under three headings, (1) shortening the round ligaments, (2) ventral fixation or *suspension*, and (3) vaginal fixation.

Herman⁹, of London, in his work on Diseases of Women, of 1898, mention three surgical methods of dealing with retro-deviations of the uterus, (1) vaginal fixation, (2) Alexander's operation, and (3) ventral fixation.

You will observe that all the authorities quoted mention Alexander's operation and ventro-suspension of the uterus, while some add other operations to the list.

Alexander's Operation.

Alquié⁶, a Frenchman, conceived the idea of shortening the round ligaments for retroversion in 1840. He did not operate. Alexander of Liverpool, performed his first operation in 1881. Adams, of Glasgow, operated independently two months later than Alexander, but published more than six months earlier. But I shall not go farther into the history of this operation. Neither shall I consume time by a description of its *modus operandi*, both of which may be far better obtained by reference to any standard work on the subject.

Garingues⁷ says, "This should be the operation of choice, but it is contra-indicated if the uterus is held back by adhesions, or in old women in whom the ligaments become atrophic."

Herman⁹, of London, says, "Alexander's operation permanently cures retroflexion of the uterus; but it does not cure prolapse. If cystocele is associated with retroflexion, your patient will not be cured. It is not without danger, which comes from the difficulty of the operation, difficulty in finding the ligaments. In many cases operators have failed to find them, and fatal injury has been inflicted in the search. The pulling of the ligaments interferes with their blood supply, and resulting inflammation may lead to deep suppuration which may spread to the peritoneum with fatal results. Or the suppuration may come toward the surface leaving a weak canal. Later the ligaments may slip back and the uterus become displaced again. A canal thus weakened by suppuration favors hernia, in fact, the inguinal canals cannot be wholly or partly opened up without favoring hernia."

Reed¹ considers Alexander's operation indicated in any backward or downward displacement in which there are no adhesions. Where the uterus is greatly enlarged and the utero-sacral ligaments are also relaxed, very little benefit can be expected to follow Alexander's operation alone.

There are several complications to be taken into account. Adhesions in the inguinal canal sometimes effectually prevent the drawing out of the cord. We may encounter a delicate cord. In a few instances the cord will break. In some instances it has been found to run through the inguinal canal.

Penrose⁵ says, "The field of this operation is very limited. It is not applicable when there are adhesions nor when there is disease of the tubes or ovaries requiring operative treatment."

Montgomery⁸ mentions the disadvantages of Alexander's operation as (1) two incisions have to be made, (2) operation is limited in its application, as it is only in those cases in which the uterus is mobile that we can practice the procedure, (3) the round ligaments are sometimes so attenuated as to be of little use in maintaining the organ, in one operation of his the ligament on one side being entirely absent, and (4) in cases of infection the infected ligament may slip back, carrying infection in beneath the peritoneum.

Pryor¹⁰—"Does not endorse Alexander's operation. The operation has two disagreeable sequelae; hydrocele of the ligament and inguinal hernia. He has collected 54 cases of hernia resulting from the operation. He says curettage and properly performed plastic work will cure uncomplicated retroposition whenever Alexander's operation can, and without its accidents. Pregnancy is not influenced by it."

Dr. E. C. Dudley⁶ says, in the last edition of his Gynecology, that "Alexander's operation is only permissible when the operation is not complicated by a tumor, inflammation of the uterine appendage, adhesions or other impediments to replacement. The field therefore is not very great."

Ventro-suspension.

The operation of ventral suspension of the uterus¹⁰ will be always inseparably connected with the names of Ohlshausen, of Berlin, and Kelly, of Baltimore, for having the genius of proposing, executing and describing a systematic operation; although a similar operation had been previously performed by other surgeons in isolated cases and with indefinite plans. For a description of the technique of this operation I would refer you to Kelly's Operative Gynecology or to some other of the many excellent works on the subject.

Herman⁹ says that retroflexion with descent, in which pessaries fail, ventral *fixation* is the only treatment that will cure. He has known patients who have been invalids for years made able to lead active lives by this operation.

Reed¹ speaks of *fixation* and not of *suspension* and says it is limited to those cases in which pregnancy is impossible, and to cases of very severe prolapse with great relaxation.

Penrose⁵ says the operation that at present seems to possess most advantages for the cure of those cases of retroversion of the uterus that cannot be cured by the pessary is the operation of ventro-suspension of the uterus. If this operation is properly performed, the course of subsequent pregnancies and labors seems to be in no way impeded.

Montgomery⁸ asserts that ventro-*fixation* permits the inspection and treatment of intra-peritoneal conditions which is of great advantage. A disadvantage is that it has been found to interfere in some degree with gestation and labor. He also mentions a case where a large portion of intestine slipped behind the band of adhesion, became strangled and caused death.

Garrigues⁷ says it is better to shorten the round ligaments than to fasten the body of the uterus to the abdominal wall as the pseudo-ligament has more than once led to ileus and death.

Pryor¹¹ thinks ventra. *fixation* objectionable because it pulls the body of the uterus out of the pelvis into the abdomen. He also says it

straightens out the utero-sacral ligaments, causing them to come together and constrict the rectum. He is of opinion that the operation has little effect upon pregnancy, but conduces to faulty presentations of the foetus and to dystocia.

Dudley⁶ states that the contra-indications of Alexander's operation become at once the indications for abdominal section and suspension. Hence the field for this operation is much wider than for the round-ligament operation.

Bland Sutton⁴ says the hysteropexy and the operation for shortening the round ligaments are the two principal methods of dealing with this condition; but he strongly prefers hysteropexy, as it is the more satisfactory operation and gives excellent results. In a small percentage of cases of hysteropexy it has been followed by difficulties during labor. These risks are small when the attachments are properly made.

Howard Kelly¹² suspends the uterus only in cases of persistent retroflexion which refuse to yield to simpler plans of treatment through the vagina, and then only when the discomforts of the retroflexion are sufficient to interfere seriously with health.

The two principal objections made against the operation of ventral suspension of the uterus are its supposed influence upon pregnancy and labor, and the risk of a portion of the intestine slipping behind the suspensory ligament, becoming obstructed and thus causing death.

Let us notice what some authorities say on the subject. Howard Kelly remarks: "I have heard from 49 married women upon whom I have performed my suspensory operation at a date sufficiently remote to form a judgment as to the result. They reported 14 cases of pregnancy, and in only one of these was there any complication attributable to the suspensory operation. In that case the uterus was suspended not by the fundus, but by the ovarian ligaments. The womb became infected, the ligatures were discharged and the uterus was bound to the abdominal wall by *broad dense adhesions*. This woman had an instrumental delivery and recovered."

Pepprose⁵ and his assistants did ventro-suspension 310 times in seven years. 211 of these women made written reports of their condition. Of 20 women who became pregnant and went the full term, the course of pregnancy was normal, and the children were all born alive. One woman had a prolonged and difficult labor, though the forceps were not used. In one case forceps were used to deliver a 10-lb. child, who presented in occipito-posterior position; in the remaining 18 cases labor was normal. Eight cases out of this series miscarried. The operation of ventro-suspension seems to have had nothing whatever to do with producing the miscarriages. The author still continues to perform this operation with equally satisfactory results, and says if this operation is properly performed, the course of subsequent pregnancies and labors

seems to be in no way impeded. The operation should always be accompanied by perineorrhaphy and trachelorrhaphy when these operations are required.

Beyea¹³ makes the statement that there is scarcely an operation in surgery which has been subjected to more adverse criticism than ventro-suspension; no operation which has been more often incorrectly performed and its objects more often misunderstood.

We hear from one quarter that as a result of the abdominal adhesion, the course of gestation has been greatly interfered with, we also hear of the induction of labor, and even in a few cases that Cæsarean section has been necessary, that labor at term is difficult and complicated, and that abortion or miscarriage often occurs. It is said that an intestine has caught behind the suspension ligament and intestinal obstruction, resulting in death, has occurred. It is also said that recurrence of displacement frequently takes place.

Beyea says: "Regardless of these criticisms, which must be accepted as facts and which form the standpoint of the writers condemning the operation, in my experience of eleven years in 465 cases, ventro-suspension of the uterus has ever proven an efficient operation, has never been complicated and never produced abnormal gestation or complicated labor."

I believe in the large majority of cases where failures occur or where serious complications arise it is the fault of the particular method of ventro-suspension performed by the operator and not the fault of the operation itself. A positive fixation and not a suspension has been performed. Other operators fail to obtain a sufficiently strong suspensory ligament and displacement or failure follows.

If the proper conditions of this operation are secured, then the complications of gestation and labor will not and cannot occur.

Dr. Beyea wrote letters to the 465 women operated upon and had replies from 272 of them. 94 per cent. of those who replied were either restored to excellent health or good health, or improved in health as a result of the operation of ventro-suspension alone or combined with other operations required on the appendages or perineum and cervix. About a dozen of the women said the uterus had gone back but in an examination of two of these, the uterus was found in good condition. The report of recurrence came chiefly from women who had since borne children.

Beyea¹³ reports a personal knowledge of five cases of recurrence. In three it occurred before the patients left the hospital, in two as a result of coughing in an attack of pneumonia. And in the other the attachment was separated by the resident physician in removing the sutures from the cervix. In another, the woman, regardless of advice, took up heavy household duties immediately after returning home, lifting an 18 months child several times a day. In the fifth case the uterus was found retroverted to the second degree, and on opening the abdomen again the

ligament was seen attached to the anterior surface of the uterus well below the fundus, which doubtless accounted for the recurrence.

I here quote Dr. Beyea¹³: "The important question, the influence of this operation on the course of gestation and labor, I wish to particularly call to your attention. Of the 272 women, 153 are now at the time of this study, married, this number including such as have had operations on the tubes which might render them sterile; 119 are single or widowed, or the operation rendered them absolutely sterile.

"Of the 153 married women, 41 have been pregnant since operation, 37 have gone to term and borne a living child. Five have twice borne a child, two have given birth to twins, one twice. One woman died of eclampsia following a normal labor; in four, instruments were used at birth, once for posterior rotation of the occiput; in one there was an unusual, but not sufficient to be termed post-partem, hæmorrhage; in two the labor was long and difficult, one lasting three days, and in one there was hæmorrhage during pregnancy, the cause of which was not determined. In none of the 47 labors as described by the patients and the attending physician was there complication which could be attributed to the operation. It was thought possible that the operation was the cause of the hæmorrhage in the one case following labor, but there was no proof.

"As to the other complications, the use of forceps and long labors, they are complications which are not infrequent where no operative procedure had been performed upon the uterus, and are not more than normally frequent here.

"Nine of the 153 women have aborted or miscarried, five twice, all before the sixth month; nine or 14 miscarriages, or abortions, considering those induced, for these cases represent all classes of women, is not more than the average percentage in 153 women.

"There were no operative complications, no instances of intestinal obstruction in any of the 465 women.

"There was one death, which occurred 18 hours after cervical dilatation and ventro-suspension of the uterus, the operation lasting 30 minutes. The post-mortem failed to discover the cause of death, and the conclusion was that death resulted from surgical shock, for there was a rapid, failing heart-action. The mortality, one death in 465 cases, was therefore a little less than one-fifth of one per cent.

"Considering that this experience extends-over a period of 11 years, and represents an accurate study of 465 cases in which the special method of ventro-suspension of the uterus described was performed, with the fact that 41 of the 153 married women have become pregnant, gone to term, and passed through normal labors; that but nine of the same women have miscarried; that there have been but five recurrences of the displacement, always for a sufficient and active cause, and that 95 per cent. of the 272 women responding to communication, report com-

plete relief of symptoms or improvement in health as a result of the operation, the conclusion is warrantable that this particular method of performing ventro-suspension is completely satisfactory and its results most gratifying. Its mortality being one-fifth of one per cent. in our experience, makes it practically free from danger to life, and no objection can be offered for this reason. Its performance is most warrantable and its sequelae less frequent than the extra-abdominal operations, such as the Alexander-Adams."

Personal experience makes stronger impressions upon the mind than text-book literature. I have performed the operation of ventral suspension of the uterus 24 times in my own practice, and have probably assisted my colleagues in an equal number, making in all an experience of about 48 operations. I have carefully preserved notes of all my 24 cases. In three of them I had occasion to re-open the abdominal cavity at a period of nearly three years after the suspension had been done: one for appendicitis, one for ovarian cyst and the other for disease of the ovary. In each case the uterus was in good position with a suspensory ligament from two to four inches in length still present and apparently on duty. In one of these three, the young lady had got married and had a child at term, the labor was normal, both mother and child did well. On opening her abdomen the second time, I had the opportunity of demonstrating to my private gynecological class a uterus in normal position and a suspensory ligament, of between three and four inches in length, which had evidently participated in the involution of the uterus which normally followed her delivery.

In only one instance, so far as I can learn, has re-displacement occurred. This was in a stout lady, 44 years of age. The uterus was large and heavy, the sound passing $3\frac{1}{2}$ inches. There was also prolapsus uteri, and a long, thick, lacerated cervix protruded $1\frac{1}{2}$ inches outside of vulva. It was of long standing. She was curetted, cervix repaired and ventral suspension performed. The patient did well for over one year, when a sudden fall on the buttocks was blamed for causing re-displacement.

Personally I feel that in her case the special operation was not well chosen. I should have amputated the cervix, tied off the tubes and performed a positive ventral *fixation*. A long cervix has not sufficient room in the vagina to lie comfortably across that canal, so, aided by the action of intra-abdominal pressure on the long cervix, the latter gradually assumes a position in the axis of the vagina, the fundus uteri falling backward, and in this way retro-displacement and prolapse again occurs.

Choice of Operation.

In putting experience, practice, theory and study of the literature together I come to the following conclusions:—

That the conscientious, resourceful operator will be bound by no rule, but will aim to suit the operation to the particular case in hand.

If, for any reason, the posterior cul-de-sac has been opened, an attempt should be made to correct a retro-displacement by one of the methods which fix the cervix well back in the hollow of the sacrum.—Pryor's for example.

That Alexander's operation should be the operation of choice in all *uncomplicated* cases. That complications are the rule, consequently, this method is very limited in its field of usefulness. That uncomplicated cases are those in which any operation is least indicated. That all methods of shortening the round ligaments by doubling them up from within the peritoneal cavity, utilize the strong portion of the ligament, leaving on duty the weak, stretched portion within the abdominal wall to stretch again in course of time.

That ventral suspension—not fixation—when properly performed in combination with other procedures, does relieve the malposition, and prevents, more surely than any other method, a recurrence of the same. Its dangers are small, if any, in subsequent pregnancy and delivery. It has the advantage of being quickly and easily performed, and is applicable in all cases where any other method is, and in very many cases it is the only method that offers a reasonable hope of permanent cure.

That those who criticize most severely the two time-honored operations, Alexander's and ventro-suspension, are those who have some pet operation of their own, or a modification of some one else's, to extol.

In conclusion, Mr. President, I am here to make the statement that while ventral suspension, in common with every other human endeavor, has its failures, it more nearly approaches a universally applicable operation for retro-deviations of the uterus than any other method known to the medical profession.

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URAEMIA, ITS PATHOLOGY AND TREATMENT.*

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SOME three days ago I learned from our committee on papers that no one had volunteered a paper for this meeting and, after soliciting a contribution from several members of the Association, who quite properly declined on the ground of too short notice, I concluded, rather than have no subject for discussion at this regular meeting, to fill the breach myself, and, utilizing the limited time at my disposal, to prepare a short paper on uraemia.

I had hoped at a later date, when relieved of the onerous duties of the secretaryship, to go into this subject more fully, and to be able to present something more worthy of the consideration of the Association; but the very short period of time I have had to prepare will, I hope, excuse me, in asking at the outset, your indulgence for the manifold imperfections of a hurriedly prepared paper.

The subject is a most interesting one, and no class of cases which we are called upon to treat, leaves a more vivid impression on our memories, than do those severe cases of uraemia which we so often unsuccessfully battle with, so insidious and frequently so sudden in their onset, so frightful in their manifestations to relatives and friends, who are, perhaps, compelled to restrain by violence the maniacal struggles of a loved one, who hitherto had always been of a gentle disposition, or to listen to a torrent of most shocking, profane and sometimes indecent language from lips which, in health, had never been even suspected of being possessed of such capabilities.

The word uraemia may be defined or stated to be a convenient and comprehensive term for a variety of toxic symptoms met with in the course of several forms of renal disease or other conditions in which the eliminative functions of the kidneys are interfered with. Many theories have been advanced explanatory of the symptoms, but the view most widely held, perhaps, is that they are due to an accumulation in the blood of excrementitious material or body poisons which the kidneys have failed to throw off.

In view of the complexity of the symptoms, it would seem impossible to find a single theory which shall afford a satisfactory explanation of all cases, but the different theories may be divided into two classes: 1. Mechanical, 2. chemical.

MECHANICAL THEORIES.

Numerous minute hæmorrhages have been found in various parts of the brain, but these are so rare and so uncertain as to suggest they are the result rather than the cause of convulsive seizures.

* Read before the Northern Alberta Medical Association.

Traube advances the theory that the basis of uraemic symptoms is œdema of the brain which, from its increased volume, induces anaemia. Two conditions predispose to œdema, marked hydraemia and increased arterial tension, which, as we know, are so frequently found in disease of the kidneys. Traube considers that the special symptoms depend upon the degree and localization of the œdema, namely, convulsions occur when the middle lobe is affected, coma when the œdema extends to the whole cerebrum.

This theory is supported by: (1) The frequency of cardiac hypertrophy and hydraemia in cases of uraemia; (2) The production of coma and convulsions in dogs by the injection of water into the carotid, after ligation of the ureters and one of the jugular veins.

The objections to this theory may be stated briefly thus: That these symptoms in dogs are only produced experimentally by the injection of enormous quantities of water, and that even then the brain may present no indications of œdema. Further, hypertrophy of the heart and hydraemia are not always found in cases of uraemia, while post mortems frequently fail to demonstrate œdema of the brain. In cases where cerebral œdema has been found, it has been thought by some to be the effect rather than the cause. Notwithstanding these objections, Traube's theory has, in a modified form, several adherents.

CHEMICAL THEORIES.

(a) Retention of urea.—This theory is favored by the following:— (1) The appearance of marked symptoms when the secretion of urine and elimination of urea are much reduced. (2) The detection of urea in the blood under such conditions. (3) The production of drowsiness, convulsions and vomiting after ligation of the renal arteries, or ureters, or removal of the kidneys.

Against this theory it must be admitted: (1) That all symptoms of acute uraemia may be absent, when complete suppression has lasted for many hours or even days, without vomiting or diarrhœa, which might produce vicarious elimination. (2) That the symptoms, in their frequency and severity, do not bear any relation to the quantity of urea excreted. (3) That, occasionally, no symptoms of uraemia may be present even though large quantities of urea are found in the blood. (4) That when urea is given to animals with their food, no symptoms are produced, so long as it can be freely excreted. (5) That frequently in dogs no symptoms follow the injection of large quantities of urea into the circulation.

In any case that urea cannot be the sole determining factor in uraemia, is indicated by the fact that death, with uraemic symptoms, occurs much more quickly when the ureters are ligatured than when the kidneys have been extirpated.

(b) Ammonium carbonate.—The theory that ammonium carbonate might be the toxic agent in uraemia was advanced by Frerichs. In support of this theory we have: (1) The comparative ease with which urea can be transformed into ammonium carbonate. (2) The ammoniacal odor of the breath in cases of uraemia. (3) The occasional detection of small quantities of ammonium carbonate in the blood in case of puerperal eclampsia. (4) The similarity of the symptoms produced by experimentally injecting ammonium carbonate. (5) The possible absorption of ammonium carbonate resulting from decomposition of urea within the intestine or urinary passages.

The objections are:—(1) That the ammoniacal odor of the breath depends upon decomposition within the mouth. (2) That it occurs both in health and sickness, and is not limited to renal affections. (3) That in uraemic persons this transformation of urea in the blood does not occur. (4) That the injection of urine which has undergone decomposition is not followed by uraemic conditions, unless the urine has been made septic by infection.

The difficulties connected with the above two chemical theories have led to other investigations; and various agents have been boldly advanced as the cause and as strongly combatted, such as accumulation of potassium salts, chlorides, creatin, creatinin, leucin and tyrosin.

Bouchard has propounded the theory of auto-intoxication according to which the body manufactures poisons which are prevented from destroying life by their rapid elimination. An interesting circumstance, and a very suggestive one, is the frequent occurrence of uraemic symptoms during the rapid disappearance of renal dropsy. This has been supposed to be due to the sudden absorption into the circulation of the alkaloids, or ptomaines, stored up in the dropsical fluid.

From the foregoing, it would seem that the exact cause of uraemia is still not finally settled. To give the arguments pro and con for the different theories is much like building up men of straw and knocking them down again. These different theories have each some claim to consideration, but none of them satisfactorily fulfil all the conditions. It is probable that a combination of two or more of the different causes advanced are responsible for the symptoms in any given case. Clinically, at any rate, it is impossible to accept any single theory in explanation of all forms of uraemia.

As the diagnosis is frequently not made until the onset of a severe attack, prophylactic measures are impossible. The points in diagnosis are briefly as follows:—

(1) Cerebral lesions, hæmorrhage and meningitis may be simulated by some cases of uraemia. Apoplexy, especially, may be a source

of error so frequently is it associated with kidney disease and sclerosed arteries.

(2) Infectious diseases, as miliary tuberculosis and typhoid fever, when uraemia has persisted for some time, may be strongly suggested by the symptoms.

(3) Uraemic coma may be confounded with poisoning by opium or alcohol. Examination of the pupils usually will determine the cause. In uraemia, the pupils are not constant; in opium poisoning, contracted; and in alcoholism, commonly dilated.

The various symptoms are well known and, without going into details, I shall simply state them as follows, quoting from Osler's Medicine :

Cerebral symptoms :—Mania, delusional insanity, convulsions, coma, local palsies, headache, itching of skin, numbness and tingling of skin, cramps in leg muscles, especially at night.

Dyspnoeic symptoms :—Continued dyspnoea, paroxysmal dyspnoea, both types alternating, Cheyne-Stokes' breathing.

Gastro-intestinal symptoms :—Vomiting, diarrhoea, and uraemic stomatitis.

Fever is not uncommon and may occur with the acute nephritis, with the complications, and as a manifestation of the uraemia itself.

The following cases, occurring in the course of five years, I shall now relate, most of them being of the most desperate character.

Case No. 1.—On Nov. 14th, 1898, I was called to see Miss A., of Strathcona, a healthy-looking, well-nourished, robust girl of 16 years. She had never had, at any time previously to the knowledge of her parents, any weakness of kidneys. She had, however, occasionally complained of headaches. After milking several cows that evening, while carrying a pail of milk into the house she suddenly fell in a convulsion; and when I arrived shortly after, one convulsion was succeeding another without cessation. I at once began administering chloroform and sent for Dr. Cunningham. On his arrival, we administered, per rectum, chloral hydrate and pot. brom. in full dose. After some time the convulsions ceased; but she persisted in a state of insensibility, though the pulse was strong and the respirations normal.

Dr. Harrison, of Edmonton, was summoned in consultation about 11 p.m.; and though we persisted in our treatment, using croton oil, pilocarpine hypodermically, hot wet pack, bleeding, and saline enemas, she succumbed during the night about 11 hours after the attack began. Cheyne-Stokes' breathing was very noticeable towards the end and temperature was elevated to about 104° or 105°. A scanty amount of urine was taken from the bladder by catheter shortly before death, and found to contain about 30 to 40 per cent. albumen which, of course, supported our diagnosis of uraemia.

Case No. 2.—On April 4th 1902, I was called to see Mr. H., aged about 35, six miles out of town. I found him confined to bed and unable to move from severe pain over region of left kidney. Some days previously he had been assisting a neighbor to move, had been driving all night and had come home chilled. The following day the pain had seized him in the back and had been steadily growing worse, till he was unable to turn himself in bed.

On examination, I found him decidedly tender over the left kidney; temperature, 102° ; pulse, 78, of high tension, heart sounds normal, except that the second sound followed very closely on the first. His tongue was coated, breath foul, skin dry, and headache persistent.

His helplessness led me to think of lumbago rather than nephritis, though the other symptoms mentioned led me to strongly suspect the latter. On examination of the urine I found its specific gravity to be 1030, the color somewhat heightened, the reaction acid, and no albumen. I did not test for sugar as I had not the necessary reagents with me.

The absence of albumen surprised me somewhat, and rather strengthened the diagnosis of lumbago, though this alone would not explain the elevation of temperature.

Phenacetine, grs. vii, at intervals, was given for the relief of headache; pot. cit. and soda salicylate for the pain in the back, with hot poultices to loins, and a mustard plaster in case these proved ineffective. A strict milk diet was insisted on, and calomel followed by a saline was ordered.

The following day I again saw him. The headache, on which the phenacetine had absolutely no effect, still persisted; temperature, 102° ; pulse, 78, pain in the back not favorably affected by the poultices, but somewhat relieved by a mustard plaster afterwards. Urine tested showed sp. gr. 1028; albumen, slight trace, probably 20 per cent. The skin was still hot and dry, high tension of pulse still present, the bowels had not moved very satisfactorily. Applied dry cups to the loins and ordered the cupping repeated according to the relief afforded. I prescribed tr. aconite, m. ii, every hour for 4 doses, cal. soda, grs. $\frac{1}{4}$ for 4 doses at half hour intervals followed in 2 hours by mag. sulph. ζ ii. After two or three doses of aconite profuse perspiration set in, the headache disappeared and the patient and friends were much encouraged, though he was still very helpless from the pain in the back.

Next day I saw him again and found his condition in many respects improved, whole body perspiring freely, though the temperature still remained at 102° . The aconite had been discontinued for some hours, pulse 72, headache very slight, the bowels had moved freely and the tongue was much cleaner. The cupping had greatly relieved the pain in the loins, and the patient was resting comfortably. An examination of

the urine showed no trace of albumen. "The calomel soda, followed by a saline, was ordered to be repeated.

On Sunday, the day following, I saw him in the evening. Found him bright and cheerful, suffering no pain, except on movement. He was able to get out of bed to use commode. In every respect improvement was apparent except that his temperature persisted in remaining at 102°, or a little less, and the pulse rate rather low at 72. The urine again showed a considerable percentage of albumen. The bowels had been freely moved. The following day I did not see him, but had a favorable report, that his temperature was 100°, and that he was resting easily. A sample of urine furnished me was normal in color, sp. gr. 1020, but still showed traces of albumen. The patient had been able to get out of bed and sit in the easy chair. His bowels had again moved freely and the perspiration, begun by the aconite, had continued, though the drug had been entirely discontinued, except if the skin became hot and dry when one or two minum doses promptly restored its diaphoretic action.

At this stage I allowed myself to indulge in a favorable prognosis and fully expected, at least, temporary recovery in a few days.

The following morning, however, at 6 a.m., I was again summoned with the report that, during the night, the patient had become delirious. On my way out I received a second message to make all haste, as he had lost the power of speech. The messenger, at my request, went on to town to summon a consultant. On arriving, I found the patient's temperature 104°, pulse 84, pupils unequal and dilated, and the eyes bright and sparkling. He was quite delirious, did not recognize me and was quite violent, if approached, talking loudly and threatening everyone. Physically, he was quite strong, as I learned to my cost when he struck me a sudden blow with his left fist. A neighbor assisted me, however, and we soon had him stripped, rolled up in a woolen blanket wrung out of hot water, and pilocarpine, grs. 1-6, administered. Profuse perspiration almost immediately set in, and shortly he became quieter and less violent, though he still talked incoherently. Though the bowels had moved freely twice during the night, I administered oleum tiglii, m. ii, which produced one small liquid movement. Dr. Harrison, who had been summoned by the messenger, arrived at this crisis and corroborated my diagnosis of uraemia, the result of acute Bright's disease. He advised a continuation of the diaphoretic measures employed, and a second dose of pilocarpine was administered hypodermically.

Profuse perspiration continued, but the temperature steadily rose to 105½°, when Dr. Harrison returned to town. The treatment was continued and oleum tiglii, m. i, given, which again produced a small liquid

movement. The patient became more rational, recognized me and his neighbor apparently, and said he felt better. I was, however, horrified to find that his axillary temperature had reached $107\ 4\text{-}5^{\circ}$, though all the time the perspiration was pouring forth in streams.

I immediately gave a hopeless prognosis and, as a forlorn hope, used strychnine, hypodermically, by which means he lived till 3.30 p.m., the temperature remaining very high. Cheyne-Stokes' breathing began and continued till shortly before the end. A sample of urine, obtained by catheter, was boiled and showed about 30 per cent. albumen.

The points of peculiar interest to me in this case were:—

(1) The small amount of albumen present early in the attack, and its complete disappearance for one day.

(2) The rapid rise of temperature on the 5th day in spite of profuse diaphoresis.

(3) The comparatively slow pulse throughout.

I may add a post-mortem could not be obtained.

Case 3.—On May 20th, '03, I was summoned to see Mrs. J., about 50 years of age. She had been under the care of Dr. Ferris for some days, but had had no symptoms other than sore throat and fever, with nothing to suggest kidney trouble. Owing to illness, Dr. Ferris was unable to continue attendance, and the following day, on examination, I found her throat symptoms much improved. She had, however, developed a stomatitis of the tongue and gums, had passed a sleepless night, was suffering from headache and extreme nervousness, the eyes were unnaturally bright, and pulse of high tension. I examined the urine which showed considerable albumen. She rapidly went into a condition alternating between coma and a muttering delirium, which continued for 48 hours, during which time I energetically kept up the hot wet pack, with a small dose of pilocarpine, at the outset, and purgatives which were effectual. Free diaphoresis continued for 2 days when she gradually became conscious and eventually made a good recovery, nor has there been since any recurrence of the disease. She has, I may say, exercised due care in regard to her diet, which has been of a light nature in which milk is a prominent factor. The stomatitis, which had developed when I first saw her, was probably uraemic in character.

Case 4.—On Sept. 23rd, '04, I was called, in consultation with Dr. Hotson, of Strathcona, to see Mrs. X. She had been ill for several days and had symptoms strongly suggesting typhoid fever. She was about 25 years of age full blooded, had borne four children, the youngest about one year, the eldest about six. She had always been a healthy robust woman, and had no symptoms at any time suggestive of kidney weakness. A sample of urine, treated in Dr. Hotson's office, showed about 5 to 10 per cent. albumen but no microscopic examination was made.

This fact, in conjunction with a pulse of high tension, led me to suggest the possibility of the development of uraemic symptoms, though the possibility of typhoid fever being present could not be ruled out. The milk diet and a diaphoretic mixture were continued during the day with a calomel purge.

Some eight hours afterwards in the evening I was again summoned in consultation, and found the patient delirious and in a condition of extreme mental excitement. The most violent mania soon developed, during which the patient for hours sang German hymns, prayed German prayers, couched in beautiful language, which a Schiller could not have eclipsed for eloquence and forcible delivery. At intervals she went to the other extreme; raved and threatened and denounced something or someone.

Though speaking English perfectly and rarely using the German language since childhood, up to the time of her death she adhered to her mother tongue. We put her in a hot wet pack, frequently changed, having to overcome the most desperate resistance on her part. After some three hours, pilocarpine having been administered hypodermically, free diaphoresis set in and she became quieter. At this stage we ventured to express some hope of recovery, but on taking her temperature found it 106° in axilla. This continued to rise in spite of free diaphoresis until death ensued about 2 a.m., her temperature shortly before reaching $109\frac{1}{2}^{\circ}$. A sample of urine, taken by Dr. Hotson by catheter shortly before, proved to contain about 50 per cent. albumen.

Case 5.—I will, in closing, refer briefly to a 5th case. The patient was a Chinaman and his symptoms were so typhoid in character that for a week I treated him as such. I had him removed to the Public Hospital where he suddenly rebelled, refused all food and medicine, became morose and sullen, and finally developed the most violent mania, from which he died. Drs. Hislop and Braithwaite saw him with me there. I am now of the opinion that my diagnosis of typhoid fever was in error; but, owing to the obstinacy of the patient I was unable to obtain a sample of urine.

James C. Ayer, who some time ago published his observations on a series of fifteen cases of erysipelas treated by antistreptococcus serum, reports the results obtained by the same treatment in thirty-three additional cases. Three of the patients died in this last series, the average duration of the disease was 6.8 days, as against 7.6 days in the previous series. In the first series of 79 cases treated by the older methods, the average duration was 9.4 days. The author says that this shortening of the average duration of the disease by 2.6 days about expresses the value of this form of treatment. The general amelioration of all the subjective symptoms following its employment is also in its favor, as is the apparent beneficial effect on the febrile form of albuminuria, which is present in such a considerable percentage of the cases.—*Medical Record, August 26, 1905.*

	Males.	Females.	Per cent.
Hoarseness.....	5	1	1.5
Bronchitis.....	1	2	
Dysphagia.....	2	1	
Sore Throat.....	1	0	
Follic. Pharyngitis.....	1	1	
Anaemia.....	2	7	2
Chorea.....	3	0	
Fits.....	0	1	
Eczema.....	3	7	2.5
Mycosis.....	0	1	
Headache.....	1	0	
Eaeuresis.....	2	0	
Sinus Disease.....	0	1	
Distortion of jaw.....	0	1	
Exostosis.....	0	1	

In service, June, 1899 to June, 1905.

Total number of cases, 323; males, 151; females, 172.

Enlargement of faucial tonsils alone, 27; males, 14; females, 13.

Enlargement of the third tonsil alone, 56; males, 33; females, 23.

Enlargement of the faucial and third tonsils together, 240; males, 104; females, 136.

	Males.	Females.
Between 1 and 5 years of age.....	50	40
“ 5 “ 9 “	59	74
“ 9 “ 15 “	43	55

This array of cases affords much food for thought; for, while the masses of lymphoid tissue which form the lower part of the ring of Waldeyer have of late years received increased attention from the medical profession, there is reason to believe that many at any rate of the older practitioners fail to grasp the dire results that flow directly from failure to grapple intelligently with the pathological conditions of the ring so frequently present in children and to a less degree in adults.

The subject assigned to me divides itself naturally between the child and the adult.

In the child the lingual variety is practically non-existent, and may, for the purposes of this discussion, be dismissed. The faucial variety in the child is usually soft, or adenoidal, associated with overgrowth of the pharyngeal portion of the ring, and is a genuine hypertrophy of the glandular tissue.

In the adult the faucial tonsil is usually hard and fibrous, marked by an overgrowth of the connective tissue, and associated with granular pharyngitis, an overgrowth of the separate lymphoid masses which stud the pharyngeal wall.

The lingual enlargement may be co-existent, or occur alone, and is composed of tissue analogous in all respects to the lymphoid tissue above referred to.

The varieties of the faucial tonsil are becoming better understood, and we no longer consider a tonsil as normal which does not protrude beyond the pillars of the fauces; for two of the three varieties which may be described, namely, the flat and the submerged, lie both well within these boundaries.

When is a tonsil prejudicial to health? The answer will depend upon the variety as well as upon the age of the patient, and must be decided by a reference to its appearance and the symptoms which it produces.

In order to recognize the influence of hypertrophy and disease of the ring we must carefully consider the following facts.

1st. All inspired air must, in its passage to the lungs, come into contact with these bodies, and not only do they mechanically impede respiration, but they vitiate the air by imparting to it the decomposing products of their diseased and over stimulated lacunæ. The interference with respiration produces impure blood, and, perhaps, a malformation of the chest walls, while the vitiation of the air itself prejudicially affects the entire system by a process of poisoning.

2nd. All food taken into the mouth must carry with it to the stomach the decomposing products of the tonsils, and thus digestion is impaired and malnutrition induced.

3rd. The mouths of the Eustachian tubes are by their anatomical association involved in the state of the faucial tonsils, and enlargements of these drag upon the tubes, interfering with the air pressure of the middle ear, while the air which enters these tubes during expiration frequently carries with it the above mentioned decomposing secretions and thus induces disease.

4th. The oro-pharynx, naso-pharynx and nose make up the larger part of the resonating chamber for the vocal organs; and, when the two first are decreased in size by tonsillar hypertrophies and the nose cut off entirely by these overgrowths, the effect upon the voice is distinct, and there is produced either the nasal tone so called, fatigue in speaking, or congestion and catarrh of the larynx itself.

5th. Hypertrophy of the lingual tonsil must, by its location, directly impede the action of the epiglottis and of the tongue; and, as it occurs chiefly in the female and late in life, it will the more readily give rise to functional disturbances, depending upon the temperament of the individual, and the size of the hypertrophy; and secondary changes in the larynx will be prominent features. The symptoms are divided by Levy into paræsthesia, cough, dysphonia, dyspnoea, and dysphagia.

What an importance, therefore, is assumed by these bodies, when they directly affect the respiratory, digestive, aural and vocal functions at one and the same time; and how much for weal or woe depends upon their maintenance in a state of health or disease! When we further consider their indirect effects we see to what a large field we are introduced:—

Hypertrophic rhinitis and interference with nasal respirations; disorders of the pharynx due to the resulting mouth breathing; superficial diseases of the eye-lids and conjunctivæ, and secondary interference with sight; enlarged cervical glands due to a latent tubercular process in the tonsils, which is an imperative signal for their surgical treatment; and aphonia, chorea, enuresis, reflex asthma, and paroxysmal cough, as examples of reflex neuroses and these are only a few of the evils to which these diseased masses lead.

I have, therefore, no patience whatever with the practitioner who affects to believe and preach that, as these masses have been placed in the human economy by the Creator, they must, therefore, be left in peace to work their direful effects, and advises the parents of the patient that "the victim will grow out of the condition." There is no logical excuse for such advice; nay, it is criminal.

The above list of the diseased conditions complicating my cases is extensive enough and yet, as the time for taking histories in an out clinic is necessarily limited, it is incomplete, still it will serve the purpose of showing how prevalent certain complications are.

Deafness, earache, and otitis media purulenta were found in 20 per cent. of all the cases, and of those where the faucial tonsil alone was enlarged in 6 per cent. The various forms of rhinitis in 10 per cent.; enlarged cervical glands in 5 per cent.; epistaxis and eczema each 2.5 per cent. The fact that deflections and spurs of the septum were present in 9 per cent. is suggestive, although I would not ascribe this distortion of the septum necessarily to the presence of these enlargements, yet in 5 per cent. there were present adenoids. The cases where incontinence of urine and chorea were found, were most interesting, as in each instance relief was afforded by the removal of the overgrowths.

Enlargement of the lingual tonsil is a disease that is fairly rare, but will be found if looked for oftener than is usually stated. The patient has a sense of fulness in the throat and a tickling cough, which are of serious moment to those who require to use the voice in singing or in public speaking.

The conditions of the base of the tongue in the vicinity of the glosso-epiglottic folds should always be enquired into in conducting any examination of a patient suffering from these symptoms. By depressing the tongue well forward or by the laryngeal mirror, the parts can readily be examined; and, if the gland is hypertrophied, masses will be seen filling the fossa, and marked often by greatly enlarged veins.

This gland mass is liable to attacks of inflammation in the same manner as the other tonsils of the ring, and abscess may occur with dyspnoea from the pressure on the larynx. A depressed state of the general system is often concomitant and causative.

Treatment: I must subscribe fully to the opinion of Knight "that the constitutional treatment of enlarged tonsils by itself is seldom satisfactory." Of course, anything which tends to improve the general health will manifestly reduce the dangers run by the patient, and, where the effect is chiefly shown in a chain of nervous symptoms, these may be greatly benefited, but no amount of good hygiene, diet, or tonics can eradicate a fibrous enlargement. Local applications to the tonsils have not proven beneficial in my experience, and, moreover, they are not only tedious, but painful, and in children quickly abandoned, while in adults I always have the feeling that except where the patient is very fully advised of the course that is to be followed, the process is more for the doctor's pocket than for the patient's good. There must be exceptions of course, but these are rare.

The dangers of operative interference are now so reduced by modern methods, and the surgical processes that may be had recourse to are so numerous and satisfactory, that the retention of diseased or hypertrophied tonsils in the pharyngeal cavity is not to be considered in comparison.

It is not needful to take up your time in considering these various methods, each has its merits and its adaptability for some special forms of hypertrophy or chain of symptoms.

It may be stated, however, that while it is seldom needful to totally eradicate the faucial or lingual tonsil, it is in my opinion decidedly needful to perform a thorough operation, so as to completely deprive the tonsil of the power of doing further damage to the patient. Particularly do we need to search for those hypertrophies which are buried between the upper parts of the faucial pillars, and hence I nearly always use a double tenaculum to seize these and drag them into the lumen of the guillotine, the forked forms of instrument being abandoned because of the frequency with which the forks are caught in the rings.

In the case of the adult it is well to have a galvano-cautery ready in the event of hæmorrhage occurring, but if this is not available, pressure is the best method of dealing with this somewhat rare accident. The faucial tonsil may reproduce itself in a child, but I still believe that reproduction as a rule is due to insufficient removal of the morbid tissue at the first operation. It is also my practice to use a general anaesthetic unless there be positive contra indications, or the hypertrophy be confined to one portion of the ring. This secures the opportunity for thorough removal of all offending tissue, and preserves the patient from the shock of severe pain associated with great fear. This opportunity and preservation each offset any objection to the anaesthesia.

SPINAL CARIES WITH COMPRESSION PARAPLEGIA—ETIOLOGY, SYMPTOMOLOGY AND TREATMENT.*

By GOLDWIN W. HOWLAND, M.B., M.R.O.P., London, M.R.C.S., Eng., Toronto.

THIS paper is but a partial summary of a very extensive article that I intend to publish later. It is based on the statistics of 200 cases, mainly from the records of the National Hospital for Nervous Diseases, London, England. Many of these cases were personally observed.

Etiology.—Spinal Caries occurs most frequently between the ages of 1 and 10 years and gradually diminishes in frequency as old age is approached; and, yet, it is extremely important to note that 5 per cent. of the cases occurred over the age of 50. The male sex is far more frequently affected than the female, and this law extends also to the influence of heredity, as the male side most often transmitted the constitutional tendency in the 36 per cent. that showed a family history of tuberculosis.

The spinal column is a favorite locus for the bacillus to set up secondary trouble, and over a quarter of the cases have had some previous infection, usually in the lungs, pleura, glands, hips, or knee. It may be well to emphasize the close relationship between spinal caries and pleurisy, although the latter disease is more frequently secondary than primary.

By far the most important etiological condition is injury, and this plays a more important part in vertebral disease than is ordinarily known, as indeed it does in all bone tuberculosis.

In proof of the fact that injury acts as a primary cause, rendering the vertebrae susceptible to tuberculosis, and is not merely a secondary cause revealing the affection in an already diseased bone, attention may be called to the fact that the period of time usually following the injury before active signs of caries appear, corresponds to the time from the initial symptoms till the marked signs appear in cases not due to injury. In an immense number of cases the patient had suffered from a severe blow, fall or twist, followed by continuous or recurrent pain, which after a period averaging from 6 to 7 months was followed by further signs of the disease.

Another important etiological consideration is the question of previous spinal caries, and I desire to call your attention to this often overlooked point, namely, that the patient with spinal caries is exceedingly likely to have a relapse. In 54 of these cases this history was present and often not one, but four or five relapses were chronicled, and among these statistics only those cases were included in which the return occurred after 5 to 10 years, whereas many cases temporarily recovered

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but had a return of severe paraplegic symptoms within a few months of their reported cure. A first attack before the age of ten does not usually recur before 20 or 30, usually after an interval of 15 years. It must also be noted in reference to the probability of relapse that it is common to operated and non-operated cases, and also that the proportion of cases suffering relapse must be very large, since so many of these cases were only seen during the primary attack.

Symptomology.—The symptoms of spinal caries with paraplegia are in the first place those of ordinary caries and later those of paralysis.

The earliest and by far the most striking symptom is undoubtedly pain. It is present in almost every case, excluding, occasionally, those in very young children or in patients having a relapse, but who have previously had angular curvature. The pains complained of vary greatly in severity, in character, and also in position, according to the part of the column affected.

There are, I believe, four distinct causes for the pain in these cases : firstly, and most frequently, it is a symptom due to affection of the minute nerves supplying the portion of the diseased bone or joint. As such it is the earliest sign of the hyperaemic or inflammatory condition, and occurs usually months or even years before the subsequent symptoms appear and, similarly to other bone and joint affections, it is usually referred to the areas supplied by the roots of the same nerves (those of abdomen, chest, limbs). The other causes of pain are usually late in the course of the disease, and are meningeal and root pains. It is customary to say that the pains of caries are root pains rather than due to pressure on the nerve roots, or to inflammation of their coverings; but one is struck by this fact, that pain is the first symptom, occurring when the joint is first affected and long before there is any opportunity of the roots being attacked. This, I believe, to be the true cause for the difference in severity between caries and spinal tumor, since in the latter the pressure may be early on the nerve roots. A last cause for the production of the pain is certainly the implication of the pleura.

Turning now to the other symptoms of spinal caries, one may refer briefly to rigidity, local tenderness and angular curvature.

The symptom of rigidity is often a difficult one to elicit in paralyzed cases, so that its value in diagnosis is mainly in the earlier stages of the affection. It also has the disadvantage that it is not often a cause that calls to itself the attention of the patient.

Local Tenderness is another symptom that is valuable in its presence, but absent in 50 per cent. of the cases. It varies in degree from a sensitiveness which is so slight that it may be no greater than found in hypersensitive, though not organically affected spines, to a severity that causes the patient to cry out with the slightest pressure.

Angular curvature is the most decisive symptom in the diagnosis of simple caries, and it is of the greatest value in distinguishing compression of the cord due to tuberculous disease from that due to other causes. It may, however, be very late in appearing, and often paraplegic signs may occur first; while in a few cases there may be absolutely no deformity of the spine, and yet complete paralysis occur. It may be in the form of a strictly angular curve or it may be more extensive including several vertebræ; and, while in addition, a lateral curve may be present, yet one must be most careful in distinguishing the accompanying paralysis from the functional type that frequently accompanies lateral curvature proper.

The onset of the paraplegic symptoms varies, and paralysis may exceptionally occur suddenly without premonitory symptoms, a condition more often seen in cases who have had angular curvature for some years. Practically, always, there is a gradual onset of the symptoms, motor paresis, defect in sensation, and disturbance in control of bladder and rectum. So that, in a typical case, we see pain followed by angular curvature, and, later, gradual weakness of the extremities, accompanied by some sensory disturbance and, lastly, the affection of the bladder and rectum. Yet it must be clearly understood that every possible difference may occur from this ordinary type, not only as regards the relation of the curvature and paraplegic symptoms already referred to, but these latter symptoms exhibit every class of variation. Sensory disturbances may appear first or may be completely absent, and even the disturbances in the bladder function may rarely occur as the primary symptom, but the disturbances in the power of locomotion is the symptom on which the patient places greatest importance.

The important symptoms of *Paraplegia* are four in number: (1) *reflex*, (2) *motor*, (3) *sensory*, (4) *visceral*.

(1) The condition of the reflexes is probably the earliest symptom and, therefore, the most important for prompt diagnosis of compression of the cord. Varying according to the position of the lesion, they are of especial value in the supra-lumbral regions. In cases where caries is present or suspected, marked increase in the knee jerks, ankle clonus, and an extensor plantar response may precede any marked difficulty in locomotion and, yet, be conclusive evidence of the oncoming paralysis.

(2) The motor symptoms usually advance gradually, frequently one leg is affected before the other and the complaint is that the feet tend to drag or to get tired, or when the patient is asleep they are awakened by jumping up of the legs. If the paralysis increases, the power is gradually lost, the ankles usually showing the first marked weakness and, as the condition becomes worse, complete paralysis may ensue and the legs become flexed in the typical clasp-knife condition on the abdomen. Most frequently the last movement is some slight power at the hip and

less frequently the final mobility is found in the toes. Note also must be made of those cases, fortunately few in number, where the loss of power is sudden in its onset, and a few hours or days may produce a complete paralysis in the motor power of the body.

(3) In the sensory symptoms the most extraordinary variation occurs. A typical case is characterized by gradual loss of all forms of sensation from the toes upwards, but very many different types are found and they may be a true disassociation of sensation, touch being present, pain, sensation being lost. Often the greatest care is needed to make out the loss of sensation, and at other times it may be absolutely complete. It is of great value in aiding the localization of the lesion when it can be accurately marked out.

(4) Finally, the bladder symptoms, whether of early difficulty, reflex incontinence, or ordinary incontinence, generally occur late in the disease, frequently are absent, and nearly always are a grave symptom. Yet, as the case improves, they may be the earliest symptom to disappear.

Other rare symptoms may briefly be noted, as edema of the legs, glossy legs, and disturbances of the cervical sympathetic.

Diagnosis.—This part of the subject I shall only refer to as it is too extensive to take up in this paper.

The main diseases causing compression of the cord are, in addition to caries, tumor of the spinal cord, meninges or vertebra; hydatids not infrequently exercise pressure; and, lastly, pachymeningitis, syringomyelia and syphilitic affections are outside conditions which are liable to cause mistakes.

Much more frequently, rheumatism, sciatica, intercostal neuralgia, pleurisy are diagnosed, where the condition is in reality spinal caries or spinal tumor, and too much emphasis cannot be laid on the care that is necessary in making a complete examination of the nervous system from optic discs to plantar reflex, in every case where any defect in the normal motor, sensory, or reflex conditions are present.

Treatment and Its Results.—The treatment may be non-operative or operative, and it is even yet a debatable question as to when operation should be tried, and I believe these statistics may show some light on the question.

Non-operative treatment is too well known to be referred to, but I would recommend the use of the shoes used by Gowers for extension in cases with contraction of the legs.

Operative treatment is simply laminectomy with subsequent removal of granulation and caseous or carious products, and disinfection by *bichloride* or *cyanide gauze*.

One law of great importance must be added, namely, never, except under exceptional circumstances, open the dura mater.

Of the 200 cases collected and now published for the first time, 77 were operated on by laminectomy and 123 were non-operated cases. Taking the whole number of cases and examining the results of treatment, one finds that in order to make a careful comparison, the condition of patients on discharge must be grouped into four classes at least:—

Of the 200 paralytic patients, 88 were able to walk out *cured*, 28 could perform the movements of the legs in bed but could not walk, 46 showed no improvement, and 37 died.

If now to examine the result of treatment still more carefully, the cases are divided into three divisions:—

(A) Those able to walk or to perform all movements of the legs with ease *on admission*, (i.e., the mild cases of compression), 37 were cured, 6 improved, 9 showed no change, and 2 died.

(B) The second division comprises all the severe cases of compression which were not operated on, namely, those who could perform only the slightest movement of the legs or no movement whatever on admission: 27 were able to walk out, 7 showed improvement, 20 showed no change, and 14 died.

(C) The third class is composed of the same type of severe cases as the second, but they were treated by operation: 24 were able to walk out, 15 much improved, 17 showed no change, and 21 died.

Now you may claim that the non-operated cases did better than the operated, but it is usually the worst class of cases who are turned over to the surgeon as a last hope.

Despite the view taken by some that early operation in the severe cases should be undertaken; yet, when one sees the wonderful results that may be attained in cases utterly unable to move a limb, with legs spastically contracted, and attained by simple medical agencies, one will support, with few exceptions, the rule for treatment that operation in spinal caries with compression paraplegia should be undertaken in only the severe class of cases who are bedridden.

In these severe cases, when ordinary non-operative treatment has failed after 6 or 8 months' treatment, or if the condition grows gradually worse, while the case is being treated, operation is indicated.

Any improvement, however slight, contra-indicates operation; while, on the other hand, sudden severe increase in the symptoms may be a deciding point in its favor.

The cause of death following operation is frequently meningitis, general tuberculosis, asthenia or amyloid disease, and it may also be added that when large burrowing abscesses are found, be they pelvic, lumbar or pleural, the prognosis is much worse and cure less probable.

In conclusion, the principal conditions found, post-mortem, may be briefly outlined as follows: Softening and vascularity of the vertebra, carious, caseating, granulating or purulent cavities in the vertebra, ab-

scasses surrounded by granulation tissue pressing on the cord, granulation tissue surrounding or compressing cord, fibrotic tissue compressing cord, the cord compressed by sharp angular bone curve or extended over long prominence, the cord kinked on itself, and softening of the cord, myelitis, and secondary degenerations.

Such is the general outline of the interesting subject of spinal caries with compression paraplegia; and the great importance of careful study of all cases presenting the slightest symptoms can be well understood, when the percentage of mild and severe cases cured is compared. Early diagnosis and prompt treatment means perhaps more here than in any other form of paralysis.

UNITY, PEACE AND CONCORD.

A FAREWELL ADDRESS TO THE MEDICAL PROFESSION OF THE UNITED STATES.*

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ON this occasion I have had no difficulty in selecting a subject on which to address you. Surely the hour is not for the head but for the heart, out of the abundance of which I may be able to express, however feebly, my gratitude for the many kindnesses I have received from the profession of this country during the past twenty-one years, and from you my dear colleagues of this state and city, during the sixteen years I have dwelt among you. Truly I can say that I have lived my life in our beloved profession—perhaps too much! but whatever success I have had has come directly through it, and my devotion is only natural. Few men have had more from their colleagues than has fallen to my lot. As an untried young man my appointment at McGill College came directly through friends in the faculty who had confidence in me as a student. In the ten happy years I lived in Montreal I saw few but physicians and students, among whom I was satisfied to work—and to play. In Philadelphia the hospitals and societies absorbed the greater part of my time, and I lived the peaceful life of a student with students. An ever-widening circle of friends in the profession brought me into closer contact with the public, but I have never departed from my ambition to be first of all a servant of my brethren, willing and anxious to do anything in my power to help them. Of my life here you all know I have studied to be quiet and to do my own business and to walk honestly toward them that are without, and one of my chief pleasures has been to work among you as a friend, sharing actively in your manifold labors. But

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when to the sessions of sweet, silent thought I summon up the past, not what I have done, but the many things I have left undone, the opportunities I have neglected, the battles I have shirked, the precious hours I have wasted—these rise up in judgment.

A notable period it has been in our history through which we have lived, a period of reconstruction and renovation, a true renaissance, not only an extraordinary revival of learning, but a complete transformation in our educational methods; and I take pride in the thought that in Philadelphia and in Baltimore, I have had the good fortune to be closely associated with men who have been zealous in the promotion of great reforms, the full value of which we are too close to events to appreciate. On the far-reaching influence of these changes time will not permit us to dwell. I propose to consider another aspect of our work of equal importance, neither scientific nor educational, but what may be called humanistic, as it deals with our mutual relations with the public.

Nothing in life is more glaring than the contrast between possibilities and actualities, between the ideal and the real. By the ordinary mortal, idealists are regarded as vague dreamers, striving after the impossible, but in the history of the world how often have they gradually moulded to their will conditions the most adverse and hopeless! They alone furnish the *Geist* that finally animates the entire body and makes possible reforms and even resolutions. Imponderable, impalpable, more often part of the moral than of the intellectual equipment, are the subtle qualities so hard to define, yet so potent in every-day life by which these fervent souls keep alive in us the reality of the ideal. Even in a lost cause with aspirations utterly futile, they refuse to acknowledge defeat and, still nursing an unconquerable hope, send up the prayer of faith in face of a scoffing world. Most characteristic of aspirations of this class is the petition of the Litany in which we pray that to the nations may be given "unity, peace, and concord." Century after century from the altars of Christendom this most beautiful of all prayers has risen from lips of men and women, from the loyal souls who have refused to recognize its hopelessness, with the war-drums ever sounding in their ears. The desire for unity, the wish for peace, the longing for concord deeply implanted in the human heart, have stirred the most powerful emotions of the race, and have been responsible for some of its noblest actions. It is but a sentiment, you may say, but is not the world ruled by feeling and by passion? What but a strong sentiment baptized this nation in blood, and what but sentiment, the deep-rooted affection for country which is so firmly implanted in the hearts of all Americans, gives to these states to-day unity, peace, and concord? As with the nations at large, so with the nation in particular, as with people so with individuals, and as with our profession so with its members, this fine old prayer for unity, peace, and concord, if in our hearts as well as

on our lips, may help us to realize its aspirations. What some of its lessons may be to us will be the subject of my address.

UNITY.

Medicine is the only world-wide profession, following everywhere the same methods, actuated by the same ambitions and pursuing the same ends. This homogeneity, its most characteristic feature, is not shared by the law, and not by the church, certainly not in the same degree. While in antiquity the law rivals medicine, there is not in it that extraordinary solidarity which makes the physician at home in any country, in any place where two or three sons of men are gathered together. Similar in its high aims and in the devotion of its officers, the Christian Church, widespread as it is, and saturated with the humanitarian instincts of its Founder, yet lacks that catholicity—*urbi et orbi*—which enables the physician to practice the same art amid the same surroundings in every country of the earth. There is a unity, too, in its aims—the prevention of disease by discovering their causes, and the cure and relief of sickness and suffering. In a little more than a century a united profession working in many lands has done more for the race than has ever before been accomplished by any other body of men. So great have been these gifts that we have almost lost our appreciation of them. Vaccination, sanitation, anesthesia, antiseptic surgery, the new science of bacteriology, and the new art in therapeutics have affected a revolution in our civilization to which only can be compared the extraordinary progress in the mechanical arts. Over the latter there is this supreme advantage, it is domestic—a bedroom revolution, which sooner or later touches each one of us, if not in person, in those near and dear—a revolution which for the first time in the history of poor, suffering humanity brings us appreciably closer to that promised day when the former things should pass away, when there should be no more unnecessary death, when sorrow and crying should be no more, and there should not be any more pain.

One often hears us a reproach that more has been done in the prevention than in the cure of disease. It is true, but this second part of our labors has also made enormous progress. We recognize to-day the limitations of the art, we know better the diseases curable by medicine, and those which yield to exercise and fresh air; we have learned to realize the intricacy of the processes of disease and have refused to deceive ourselves with half knowledge, preferring to wait for the day instead of groping blindly in the dark or losing our way in the twilight. The list of diseases which we can positively cure is an ever-increasing one, the number of diseases the course of which we can modify favorably is a growing one, the number of incurable diseases (which is large and

which will probably always be large) is diminishing—so that in this second point we may feel that not only is the work already done of the greatest importance, but that we are on the right path, and year by year as we know disease better we shall be able to treat it more successfully. The united efforts of countless workers in many lands have won these greatest victories of science. Only by ceaseless co-operation and the intelligent appreciation by all of the results obtained in each department has the present remarkable position been reached. Within a week or ten days a great discovery in any part of the world is known everywhere, and, while in a certain sense we speak of German, French, English and American medicine, the differences are trifling in comparison with the general similarity. The special workers know each other and are familiar with each other's studies in a way that is truly remarkable. And the knowledge gained by the one, or the special technic he may devise, or the instrument he may invent is at the immediate disposal of all. A new life-saving operation of the first class devised by a surgeon in Breslau would be performed here the following week. A discovery in practical medicine is common property with the next issue of the weekly journals.

A powerful stimulus in promoting this wide organic unity is our great international gatherings, not so much the International Congress of the profession, which has proved rather an unwieldy body, but of the special societies which are rapidly denationalizing science. In nearly every civilized country medical men have united in great associations which look after their interests and promote scientific work. It should be a source of special pride to American physicians to feel that the national association of this country—the American Medical Association—has become one of the largest and most influential bodies of the kind in the world. We can not be too grateful to those who have controlled its course during the past ten years. The reorganization so efficiently carried out has necessitated a readjustment of the machinery of the state societies, and it is satisfactory to know that this meeting of our state society, the first held under the new conditions, has proved so satisfactory. But in the whole scheme of readjustment nothing commands our sympathy and co-operation more than the making of the country societies, the materials out of which the state and national associations are built. It is not easy at first to work out such a scheme in full detail, and I would ask of the members of this body not only their co-operation, but an expectant consideration, if the plan at first does not work as smoothly as could be desired. On the county members I would urge the support of a plan conceived on broad national lines—on you its success depends, and on you its benefits will chiefly come.

Linked together by the strong bonds of community of interests, the profession of medicine forms a remarkable world-unit, in the progressive

evolution of which there is a fuller hope for humanity than in any other direction.

Concentration, fusion and consolidation are welding together various subunits in each nation. Much has been done, much remains to do, and to three desiderata I may refer briefly.

In this country reciprocity between the state licensing boards remains one of the most urgent local needs. Given similar requirements, and examinations practically of the same character, with evidence of good character, the state board should be given power to register a man on payment of the usual fee. It is preposterous to restrict in his own country, as is now done, a physician's liberty. Take a case in point : A few months ago a man who is registered in three states, an able, capable practitioner of twenty years' standing, a hard student in his profession, a physician who has had charge of some of the most important lives of this country, had to undergo an examination for license. What an anomaly ! What a reflection on an united profession ! I would urge you all most strongly to support the movement now in progress to place reciprocity on a proper basis. International reciprocity is another question of equal importance, but surrounded with greater difficulties and, though a long way off, it will come within this century.

The second urgent need is a consolidation of many of our medical schools. Within the past twenty-five years conditions have so changed that the tax on the men in charge of the unendowed schools has become even more burdensome. In the old days of a faculty with seven professors, a school with 300 students was a good property, paying large salaries, but the introduction of laboratory and practical teaching has so increased the expenses that very little is now left for distribution at the end of the year. The students' fees have not increased proportionately, and only the self-sacrifice and devotion of men who ungrudgingly give their time, and often their means, save a hopeless situation. A fusion of the schools is the natural solution of the problem. Take a concrete example : A union of three of the medical schools of this city would enable the scientific departments to be consolidated at an enormous saving of expense and with a corresponding increase in efficiency. Anatomy, physiology, pathology, physiologic chemistry, bacteriology and pharmacology could be taught in separated organized departments which the funds of the united schools could support liberally. Such a school could appeal to the public for aid to build and endow suitable laboratories. The clinical work could be carried on at the separate hospitals, which would afford unequalled facilities for the scientific study of disease. Not only in this city, but in Richmond, in Nashville, in Columbia, in Indianapolis and in many cities a "merger" is needed. Even the larger schools of the larger cities could "pool" their scientific interests to the great advantage of the profession.

And the third desideratum is the recognition of our homeopathic brethren that the door is open. It is too late in this day of scientific medicine to prattle of such antique nonsense as is indicated in the "pathies." We have long got past the stage when any "system" can satisfy a rational practitioner, long past the time when a difference of belief in the action of drugs—the most uncertain element in our art!—should be allowed to separate men with the same noble traditions, the same hopes, the same aims and ambitions. It is not as if our homeopathic brothers are asleep—far from it—they are awake—many of them at any rate—to the importance of the scientific study of disease, and all of them must realize the anomaly of their position. It is distressing to think that so many good men live isolated, in a measure, from the great body of the profession. The original grievous mistake was ours—to quarrel with our brothers over infinitesimals was a most unwise and stupid thing to do. That we quarrel with them now is solely on account of the old Shibboleth under which they practice. Homeopathy is as inconsistent with the new medicine as is the old-fashioned polypharmacy, to the death destruction of which it contributed so much. The rent in the robe of *Æsculapius*, wider in this country than elsewhere, could be repaired by mutual concessions—on the one hand by the abandonment of special designations, and, on the other, by an intelligent toleration of therapeutic vagaries which in all ages have beset the profession, but which have been mere flies on the wheels of progress.

PEACE.

Many seek peace, few pursue it actively, and among these few we, alas! are not often to be found. In one sense every one of us may be asked the question which Jehu returned to Joram: "What hast thou to do with peace?" since our life must be a perpetual warfare, dominated by the fighting spirit. The physician, like the Christian, has three great foes—ignorance, which is sin; apathy, which is the world; and vice, which is the devil. There is a delightful Arabian proverb, two lines of which run: "He that knows not and knows not that he knows not is a fool—shun him. He that knows not and knows that he knows not is a simple—teach him." To a large extent these two classes represent the people with whom we have to deal. Teaching the simple and suffering the fools gladly, we must fight the wilful ignorance of the one and the helpless ignorance of the other, not with the sword of righteous indignation, but with the skillful weapon of the tongue. On this ignorance the charlatan and the quack live, and it is by no means an easy matter to decide how best to conduct a warfare against these wily foes, the oldest and most formidable with whom we have to deal. As the incomparable Fuller remarks: "Well did the poets feign *Æsculapius* and *Circe*, brother and sister, . . . for in

all times (in the opinion of the multitude) witches, old women and imposters have had a competition with doctors." Education of the public of a much more systematic and active kind is needed. The congress on quackery, which is announced to take place in Paris, with some twenty-five subjects for discussion, indicates one important method of dealing with the problem. The remarkable exhibit held last year in Germany of everything relating to quacks and charlatans did an immense good in calling attention to the colossal nature of the evil. A permanent museum of this sort might well be organized in Washington in connection with the Department of Hygiene. It might be worth while to imitate our German brethren in a special national exhibit, though I dare say many of the most notorious sinners would apply for large space, not willing to miss the opportunity for a free advertisement. One effective measure is enforced in Germany. Any proprietary medicine sold to the public must be submitted to a government analyst, who prepares a statement (as to its composition, the price of its ingredients, etc.), which is published at the cost of the owner of the supposed remedy in a certain number of of the daily and weekly papers.

By far the most dangerous foe we have to fight is apathy—indifference from whatever cause, not from a lack of knowledge, but from carelessness, from absorption in other pursuits, from a contempt bred in self-satisfaction. Fully 25 per cent. of the deaths in the community are due to this accursed apathy, fostering a human inefficiency, and which goes far to counterbalance the extraordinary achievements of the past century. Why should we take pride in the wonderful railway system with which enterprise and energy have traversed the land when the supreme law, the public health, is neglected? What comfort in the thought of a people enjoying great material prosperity when we know that the primary elements of life (on which even the old Romans were our masters) are denied to them. What consolation does the "little red school house" afford when we know that a Lethan apathy allows toll to be taken of every class from the little tots to the youths and maidens? Western civilization has been born of knowledge, of knowledge won by hard honest sweat of body and brain, but in many of the important relations of life we have failed to make that knowledge effective. And strange irony of life, the lesson of human efficiency is being taught us by one of the little nations of the earth, which has so far bettered our instruction that we must again turn eastward for wisdom. Perhaps in a few years our civilization may be put on trial, and it will not be without benefit if it arouses the individual from apathy and makes him conscious of the great truth that only by earnest individual human effort can knowledge be made effective, if it arouses communities from an apathy which permits medieval conditions to prevail without a protest.

Against our third great foe, vice in all its forms, we have to wage an incessant warfare, which is not less vigorous because of the quiet, silent kind. Better than anyone else the physician can say the word in season to the immoral to the intemperate, to the uncharitable in word and deed. Personal impurity is the evil against which we can do most good, particularly to the young, by showing the possibility of the pure life and the dangers of immorality. Had I time, and were this the proper occasion, I would like to arouse the profession to a sense of its responsibility toward the social evil—the black plague which devastates the land. I can but call your attention to an important society, of which Dr. Prince Morrow, of New York, is the organizer, which has for one of its objects the education of the public on this important question. I would urge you to join in a crusade quite as important as that in which we are engaged against tuberculosis.

CONCORD.

Unity promotes concord—community of interests, the same aims, the same objects give, if anything can, a feeling of comradeship, and the active co-operation of many men, while it favors friction, lessens the chances of misunderstanding and ill-will. One of the most gratifying features of our professional life is the good feeling which prevails between the various sections of the country. I do not see how it could be otherwise. One has only to visit different parts and mingle with the men to appreciate that everywhere good work is being done, everywhere an earnest desire to elevate the standard of education, and everywhere the same self-sacrificing devotion on the part of the general practitioner. Man will tell you that commercialism is rife, that the charlatan and the humbug were never so much in evidence, and that in our ethical standards there has been a steady declension. These are the Elijahs who are always ready to pour out their complaints, mourning that they are not better than their fathers. Few men have had more favorable opportunities than I have had to gauge the actual conditions in professional private life, in the schools, and in the medical societies, and as I have seen them in the past twenty years I am filled with thankfulness for the present and with hope for the future. The little rift within the lute is the absence in many places of that cordial professional harmony which should exist among us. In the larger cities professional jealousies are dying out. Read Charles Caldwell's "Autobiography" if you wish for spicy details of the quarrels of the doctors in the first half of the last century in this country. I am sorry to say the professors have often been the worst offenders, and the rivalry between medical schools has not always been friendly and courteous. That it still prevails to some extent must be acknowledged, but it is dying out, but not so rapidly as we could wish. It makes a very bad impression

on the public, and is often a serious stumbling block in the way of progress. Only the other day I had a letter from a most intelligent and appreciative layman who was interested in a large hospital scheme about which I had been consulted. I quote this sentence from it in sorrow, and I do so because it is written by a strong personal friend of the profession, a man who has had long and varied experience with us: "I may say to you that one of the distressing bewilderments of the layman who only desires the working out of a broad plan is the extraordinary bitterness of professional jealousy between not only school men and non-school men, but between school men themselves, and the reflections which are cast on one another as belonging to that clique, which makes it exceedingly difficult for the layman to understand what way there is out of these squabbles."

The national and special societies, and particularly the American Medical Association, have brought men together and have taught them to know each other and to appreciate the good point which at home my have been overlooked. As Dr. Brush said yesterday in his address, it is in the smaller towns and country districts that the conditions are most favorable for mutual misunderstandings. Only those of us who have been brought up in such surroundings can appreciate how hard it is for physicians to keep on good terms with each other. The practice of medicine calls equally for the exercise of the heart and the head, and when a man has done his best, to have his motives misunderstood and his conduct of a case harshly criticised, not only by the family, but by a colleague who has been called in, small wonder, when the opportunity arises, if the old Adam prevails and he pays in kind. So far as my observation goes there are three chief causes for the quarrels of doctors. The first is lack of proper friendly intercourse by which alone we can know each other. It is the duty of the older man to look on the younger one who settles near him not as a rival, but as a son. He will do to you just what you did to the old practitioner, when, as a young man, you started—get a good many of your cases; but if you have the sense to realize that this is inevitable, unavoidable, and the way of the world, and if you have the sense to talk over, in a friendly way, the first delicate situation that arises, the difficulties will disappear and recurrences may be made impossible. The young men should be tender with the sensibilities of their seniors, deferring to their judgment and taking counsel with them. If young graduates could be taken more frequently as assistants or partners, the work of the profession would be much lightened and it would promote amity and good fellowship. A man of whom you may have heard as the incarnation of unprofessional conduct, and who has been held up as an example of all that is pernicious, may be, in reality, a very good fellow, the victim of petty jealousies, the mark of the arrows of a rival faction, and you may, on acquaintance, find

that he loves his wife and is devoted to his children, and that there are people who respect and esteem him. After all, the attitude of mind is the all-important factor in the promotion of concord. When a man is praised, or when a young man has done a good bit of work in your special branch, be thankful—it is for the common good. Envy, that pain of the soul, as Plato calls it, should never for a moment afflict a man of generous instincts and who has a sane outlook in life. The men of rival schools should deliberately cultivate the acquaintance of each other and encourage their students and the junior teachers to fraternize. If you hear that a young fellow just starting has made mistakes, or is a little "off color," go out of your way to say a good word to him, or for him. It is the only cure; any other treatment only aggravates the malady.

The second great cause is one over which we have direct control. The most widespread, the most pernicious of all vices, equal in its disastrous effects to impurity, much more disastrous often than intemperance, because destructive of all mental and moral nobility, as are the others of bodily health, is uncharitableness—the most prevalent of modern sins, peculiarly apt to beset all of us, and the chief enemy to concord in our ranks. Oftentimes it is a thoughtless evil, a sort of tic or trick, an unconscious habit of mind and tongue which gradually takes possession of us. No sooner is a man's name mentioned, than something slighting is said of him, or a story is repeated which is to his disadvantage, or the involuntary plight of a brother is ridiculed, or even his character is traduced. In chronic and malign offenders literally "with every word a reputation dies." The work of a school is disparaged, or the character of the work in a laboratory is belittled; or it may be only the faint praise that damns, not the generous meed from a full and thankful heart. We have lost our fine sense of the tragic elements in this vice, and of its debasing influence on the character. It is interesting that Christ and the apostles lashed it more unsparingly than any other. Who is there among us who does not require every day to lay to heart that counsel of perfection: "Judge not according to the appearance, but judge righteous judgment." One of the apostles of our profession, Sir Thomas Browne, has a great thought on the question:—

"While thou so hotly disclaimest the devil, be not guilty of diabolism. Fall not into one name with that unclean spirit, nor act his nature who thou so much abhorrest; that is, to accuse, calumniate, backbite, whisper, detract, or sinistrously interpret others. Degenerous depravities, and narrow-minded vices! not only below St. Paul's noble Christian, but Aristotle's gentlemen. Trust not with some that the Epistle of St. James is apocryphal, and so read with less fear that stabbing truth, that in company with this vice thy religion is in vain. Moses broke the

tables without breaking of the law; but where charity is broke the law itself is shattered, which cannot be whole without love, which is the fulfilling of it. Look humbly upon thy virtues; and though thou art rich in some, yet think thyself poor and naked without that crowning grace, which thinketh no evil, which envieth not, which beareth, hopeth, believeth, endureth all things. With these sure graces, while busy tongues are crying out for a drop of cold water, mutes may be in happiness, and sing the Trisagion in heaven.”

And the third cause is the wagging tongue of others who are too often ready to tell tales and make trouble between physicians. There is only one safe rule—never listen to a patient who begins with a story about the carelessness and inefficiency of Dr. Blank. Shut him or her up with a snap, knowing full well that the same tale may be told of you a few months later. Fully half of the quarrels of physicians are fomented by the tittle tattle of patients, and the only safeguard is not to listen. Sometimes it is impossible to check the flow of imprecation and slander, and then apply the other rule—perfectly safe, and which may be commended as a good practice—never believe what a patient tells you to the detriment of a brother physician, even though you may think it to be true.

To part from the profession of this country and from this old faculty, which I have learned to love so dearly, is a great wrench, one which I would feel more deeply were it not for the nearness of England, and for the confidence I feel that I am but going to work in another part of the same vineyard, and were it not for the hope that I shall continue to take interest in your affairs and in the welfare of the medical school to which I owe so much. It may be that in the hurry and bustle of a busy life I have given offense to some—who can avoid it? Unwittingly I may have shot an arrow o’er the house and hurt a brother—if so I am sorry and I ask his pardon. So far as I can read my heart I leave you in charity with all. I have striven with none, not, as Walter Savage Landor says, because none was worth the strife, but because I have had a deep conviction of the hatefulness of strife, of its uselessness, of its disastrous effects, and a still deeper conviction of the blessings that come with unity peace and concord. And I would give to each of you, my brothers—you who hear me now, and to you who may elsewhere read my words—to you who do our greatest work, laboring incessantly for small rewards in town and country places—to you the more favored ones who have special fields of work—to you teachers and professors and scientific workers—to one and all, throughout the length and breadth of the land—I give a single word as my parting commandant:

“It is not hidden from thee, neither is it far off. It is not in heaven that thou shouldst say, ‘Who shall go up for us to heaven, and bring

it unto us that we may hear it and do it?' Neither is it beyond the sea that thou shouldst say, 'Who shall go over the sea for us and bring it unto us that we may hear it and do it?' But the word is very nigh unto thee, in the mouth and in the heart, that thou mayest do it—Charity."

THE STATUS LYMPHATICUS AND THE DUCTLESS GLANDS*

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THE term Status Lymphaticus comprises a somewhat complicated pathological condition, having very much to do with perverted function of the ductless glands and disturbances in normal proportion of the so-called internal secretions, which have much more than a remote interest for the surgeon, because they are so closely allied to disturbances of nutrition and innervation, and to overgrowth of certain parts of the body. Normal relations being so far out of adjustment, the resulting condition is one which often makes the administration of an anæsthetic dangerous and the performance of otherwise clearly indicated operations even inadvisable. It has much to do also with the matter of sudden death during and after operation. Turning attention for a moment to the matter of sudden deaths, which is of such overwhelming interest for the surgeon, one may say that they have, in times past, been usually attributed to the anæsthetic or the anæsthetist, while not enough attention has been given to lesions of the lymphatic and vascular systems. While at times disturbances of the circulatory and respiratory centers may be closely associated, there are other times when there seems to be but little relation between them; as is shown by the fact that, at least in experimental animals, circulation may proceed regularly for a long time after respiration has ceased. A large proportion of cases of sudden death may be accounted for by such vascular disturbances as acute anæmia, fatty heart, rupture of vessels, syncope due to cardiac anæmia, disease of the coronary arteries, defective valves, endocarditis, etc. In the respiratory tract we may meet with pulmonary embolism, œdema, asphyxia from overloading of the left side of the heart and emphysema. Even the lesions attributed to the kidneys concern rather their vessels and this may be true also of the nervous system. While all of these disturbances have more or less to do with the status lymphaticus, the latter is nevertheless a condition not yet widely appreciated, too often recognized only after the sudden death of its victim, and yet not so easily described or defined that it can, with certainty, be always recognized during life. It therefore demands careful study.

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The fact that it has so much to do with the lymphatic system and the thymus necessarily calls attention to the functions of all of the temporary glands. Lymphoid tissue throughout the body seems to increase as the thymus diminishes, and it is quite likely that the former tissue assumes the work of the latter in the matter of regeneration and leucocytosis and the general growth of the body. Thus we find that in marasmus of the infant type the thymus has disappeared, and its condition is always a fair index as to the general nutrition of the infant. But it is not atrophy of the thymus that causes disturbances so much as it is hypertrophy; and the fact which is to us of the greatest interest in this connection is the liability to sudden death, during or after an anæsthetic, in cases where the thymus is enlarged. Between the pituitary body, the thymus, the thyroid, the coccygeal body (Luschka's gland), the testis, the ovaries and perhaps the bone marrow, there exist strange relationships which have not yet been sufficiently studied. Probably in this list, along with the thyroid, should be inserted the para-thyroids, i.e., those small bodies so often associated with the thyroid, sometimes imbedded in it, much as are the islands of Langerhans in the pancreas, so that when the thyroid is removed they go with it. In many animals, and usually in man, these little bodies are separate, and in the latter overlooked. Experimentation has shown that after removal of these, rather than of the thyroid, there appears the full train of symptoms, such as tetany, etc., which are included in the phenomena of experimental myxœdema. There can be no doubt that these small bodies are of different nature and function from those of the thyroid itself. This has led to the inference that some of them at least have really an anti-toxic function. Should this be demonstrated, the whole aspect in which we regard Graves' disease will be changed. Exophthalmic goitre used to be regarded as due to the overloading of the blood by degenerate products of a hypertrophied thyroid. These experiments raise the question of how many of these symptoms are due to excess of thyroid secretion and how many are due rather to atrophy of the parathyroids, since nearly all of the symptoms of Graves' disease follow extirpation of the latter. This theory is strengthened by the fact that in the ordinary forms of cystic goitre, where apparently thyroid secretion must be produced in excess, the symptoms of Graves' disease are lacking. Exophthalmic goitre is seen ten times as often in women as in men, while ordinary goitre affects both sexes alike. Moreover we may get all the signs of Graves' disease without enlargement of the thyroid, which, in these cases, seems to play little if any part. There is, therefore, much reason to argue that the thyroid is not the primary seat of the lesion of exophthalmic goitre, but is only secondarily involved, as, for instance, is the spleen in malaria.

It appears that when the thyroid is removed and the parathyroids remain, there follow myxœdema and cachexia, the very counterpart of

Graves' disease, but that when the parathyroids are removed and the thyroid left there follow severe nervous symptoms quite like those of Graves' disease. There is, therefore, strong reason for believing the internal secretion of the thyroid proper to be intimately related to the nutrition of connective tissue, and that the mucoïd infiltration of myxœdema is due to degeneration in the fibrous and connective textures.

With regard next to the internal secretions of the testis, we are again reminded that in some respects its structure and arrangement are quite similar to those of the pancreas, since between its tubules are met small collections of cells not so definitely grouped as in the pancreas, to which hitherto little attention has been paid. These are, in all probability, the agents which secrete some other material which has largely to do with the growth and development of the body. These are quite apart from the peculiar tubular structures concerned in the manufacture and collection of semen.

Moreover, the life history of the thymus is closely related to that of the testis; atrophy of the former depends on the complete maturation of the sexual organs. In the male guinea-pig removal of the thymus is followed by more rapid growth of testes, hence there appears reciprocal relationship between thymus and testis, each influencing the growth of the other. In females this does not seem to exist; removal of the thymus does not hasten the onset of maturity.

The testicles, then, have a well-marked triple function. (a) They produce a substance of stimulus that certainly influences development, especially in sexual characteristics. (b) They produce a substance apparently essential to the psychical manifestations of sexual activity. Although these functions are related, one is essentially developmental, while the other proceeds through many years. (c) They manufacture spermatozoa.

Corroboration of these statements is furnished by the study of cryptorchids and castrated animals. In undescended testicles the seminal cells are usually absent, whereas the interstitial gland cells remain. Such individuals develop normally, except that they are sterile, and when such testicles are removed sexual capacity and inclination disappear. The same condition results from occlusion of the vas in man, i.e., there is a disappearance of seminal cells, which is quite analogous to the atrophy of the tubular structures after occlusion of the pancreatic duct.

So far as conditions permit similar statements can be made regarding the ovary and its internal secretions.

While the thyroid, the testes, the ovaries, which have so much to do with nutrition, are then to some extent concerned in the production of the status lymphaticus, its more important expressions are, however, seen in involvement of the thymus and of the lymphatic tissue and apparatus throughout the body, but more particularly in its interior. The condi-

tion is met with most often in children, less often in young adults. Along with it goes such reduced power of resistance against all deleterious influences as to permit of sudden death from cardiac failure and from causes which seem disproportionately trivial. Such deaths have occurred, for instance, not merely during anæsthesia, but from convulsions during the exanthemata and diphtheria, and even during bathing.

The status lymphaticus is also spoken of under other names, as *lymphatism*, *lymphatic constitution*, and *status thymicus*, the latter because of the apparently active participation of the thymus in some of these cases. Thymic enlargement had been often noted in times past, at autopsies but its relation to the other features which make up the general picture of status lymphaticus were unknown until Rokitansky, in 1842, first recognized the condition but confused it with tuberculosis of the lymphatics. The death, a few years ago, of a son of Professor Langerhans, of Berlin, shortly after the injection of antitoxin intended to protect him from diphtheria, and the subsequent discovery that the boy was the victim of this condition caused widespread interest in the study of the problems involved. These have apparently to do with the thymus more conspicuously than with any other isolated organ of the body. The thymus normally begins its involution within a few months after birth and it should have disappeared at puberty. In the status lymphaticus this involution does not occur, but the enlargement persists, or even increases, up to adult life, varying greatly in different cases, its weight ranging from 20 to 135 grams.

We are as yet far from conversant with the function and purposes of the thymus, although, for convenience, it may perhaps still be grouped among the lymphatic tissues. Its juice contains numerous leucocytes which find their way into the general circulation, and it is credited with producing a secretion analogous to that of the other ductless glands. Its extract injected into dogs produces great fall of blood pressure, with acceleration of the heart, and, in fatal doses, dyspnœa and collapse. Enlargement of the thymus may cause death by pressure on important structures, even other than the trachea. Aside from dyspnœa, mechanical in character, it produces a peculiar type of asthma which has been for some time known as *thymic asthma*, in which death sometimes occurs most unexpectedly and rapidly. In these cases autopsy rarely reveals anything abnormal other than its enlargement, although at times the cut surfaces exude a milky fluid; but in all of these cases there will be found, in addition to changes in the thymus, a *general hyperplasia of the lymphatic system*, with enlargement of the superficial and deep nodes, especially in the neck, the axilla, the groin and the abdomen. Furthermore the spleen enlarges and the Malpighian bodies seem to be packed with lymphoid cells. At the same time, there often occurs enlargement

of the heart and increase in the thickness of the arterial walls. All this is sometimes so marked that Virchow suggested for it the name Lymphatic-chlorotic constitution. Narrowing of the aorta which is usually noted in these cases, is really due to the same lymphoid condition.

Of very great import to the surgeon are the *relations between rickets and the status lymphaticus*, which are so frequent and conspicuous as to indicate more than a casual connection. Nearly all cases of lymphatism display the ordinary clinical evidences of rickets. By some such relation may be best explained the benefit which accrues in many case of rickets from the administration of thymic or pituitary extracts.

Enlargement of lymphoid tissue occurs also in the walls of the alimentary canal and in those rings of adenoid tissue which mark the site of embryonic canals. The tissue may be seen in miniature around the origin of the appendix, while its most conspicuous illustrations are seen about the pharynx, where not only the pharyngeal but the faucial and lingual tonsils are enlarged. It is in these cases that we get the so-called *adenoids* of the throat specialists, in their most conspicuous expressions, while it is of the greatest interest to the surgeon to appreciate that the deaths that have occurred in connection with the *status lymphaticus* have happened perhaps more often in operations upon the nasopharynx than under any other circumstances. It may be significant also after death the normal yellow marrow of the bones seems to be replaced by red marrow.

Another expression of lymphatism may perhaps be found in what Kaposi some years ago described under the name *Lymphodermia perniciosa*, a rare condition characterized by a scaly, itching skin, exuding fluid, with later a diffuse and doughy condition of the affected parts, and then by nodules which sometimes ulcerate, the lymph nodes and spleen being also enlarged, and the general health being greatly impaired.

Thymic asthma has been in times past often called *Laryngismus stridulus*. Whether or not the latter often occurs without the former is not the primary question here, but their very frequent association is of great importance to the surgeon.

Medico-legal questions of no small interest also rise in this connection. In the *status lymphaticus* death usually occurs after a series of convulsions, and yet it may happen without a warning, just as it does during or after anæsthesia. Convulsions of any character in adolescent individuals and young children should raise a suspicion of this condition. Of still greater surgical importance is it that all possibility of the existence of the condition, when suspected, should be eliminated before operation is undertaken. It is perhaps to be feared that deaths occurring during anæsthesia are more often directly attributable to the anæsthetist than it is pleasant to acknowledge. Nevertheless there are cer-

tainly instances of this kind where he should be held absolutely blameless so far as administration of the anæsthetic is concerned, and where death may occur as by a lightning flash.

It does not, in effect, follow that chloroform is to be blamed in these cases; rather is the blame to be ascribed to the status itself. Under these circumstances death may occur at any stage of the anæsthesia, or a little time after it has been discontinued. It is most significant that the conspicuous illustrations of the relation between the condition and sudden death have occurred during operations upon the throat and nose. This seems to show the role played by the very adenoid tissue against which the operation is directed.

It is indeed an interesting and at the same time an unanswerable question, why individuals with well-marked status lymphaticus should live apparently comfortably for years and then suddenly succumb from some seemingly trifling cause.

The relations between the thymus and the thyroid are apparently unmistakable, though obscure. In perhaps one half of the cases where the thymus is enlarged the thyroid is also increased in size. Experimentally when one is removed the other seems to undergo compensatory enlargement, as though their functions were to some degree interchangeable. Much less is known as to the relations of either of these bodies to the pituitary, and as yet nothing has appeared concerning their relations with Luschka's gland.

Diagnosis. A recognition of the status lymphaticus is not always easy. Nevertheless there are certain features which are always suggestive and should arouse suspicion; among these the close relation between it and rickets, already alluded to, may furnish a hint, and when recognized, a positive warning. Widespread enlargement of the lymph nodes supplies another. The presence in the naso-pharynx of adenoid growths, especially when accompanied by enlargement of the spleen, should be regarded as furnishing a very suspicious connection; while if, in addition to this, the thymus be found enlarged, either by palpation or percussion, the diagnosis may be regarded as established. Moreover, these children, for such they usually are, have a pasty complexion, and anxious faces, and usually a sluggish disposition. Aside from evidences of rickets they are usually anæmic, often marasmic, with a special liability to spasm of the glottis; the thyroid is often enlarged, as well as the thymus. In young adults, these conditions often simulate cretinism, in that they are retarded in growth and infantile in appearance, while sexual development is retarded or impaired.

Treatment. Naturally in every well marked case of status lymphaticus one should abstain from all operative intervention, if it be possible, yet when the nose and pharynx are obstructed and oxygenation is thus

interfered with, it may seem necessary to the welfare of the child to free the nasal channels for breathing purposes.

Under these circumstances it would doubtless be well to prepare the patient for the anæsthetic by spraying the nose and throat with a one or two per cent. solution of cocaine, to which a little adrenalin may be added. Inasmuch as these operations are usually quickly performed, the best anæsthetic would probably be ethyl chloride. This, at least, may be used at first. As against the dangers of operative procedures we may feel that we have a powerful protection in the possession of adrenalin. Assuming that the result of the experimental injection of thymic juice proves it to have a depressing and pressure-lowering effect, it will be instantly seen how much can be done to counteract or ward off danger by the use of adrenalin, both previous to the commencement of anæsthesia and, if necessary, during it. By all means, then, the affected surfaces should be treated with the cocaine spray, in order to deaden acute liability to those impressions which, conveyed to the brain, may produce prompt vascular and cardiac disturbance. When operations must be performed on those known to be subjects of glottic spasm or laryngismus stridulus, one should be prepared to do a tracheotomy on exceedingly short notice, and, if the thymus be enlarged, it might be well even to make this the first operative procedure, using, if necessary, a long trachea tube. Should thymic enlargement itself call for operation, preliminary tracheotomy should not be omitted.

It must be said of these cases that, provided they can be successfully conducted through the particularly dangerous period, the improvement which results after completion of the surgical treatment is most gratifying; thus, for example, after clearing out a mass of adenoids from the naso-pharynx the welfare of the patient is quickly enhanced.

The best measures, then, in case of impending or actual danger, will prove to be adrenalin, artificial respiration and tracheotomy as emergency measures when called for.

It will frequently happen that a patient is brought for surgical attention in whom this condition may be recognized, and it should be looked for in every anæmic, ill-nourished child. Save in cases of extreme emergency operation should then be delayed until sufficient fortification can be afforded. In some cases it may be profitably postponed for weeks or months. During this time these children should be given the benefit of most carefully selected nutrition, outdoor air, sunlight, and of the especial benefits conferred not alone by such preparations as the phosphates or glycerophosphates, but by *thymic or pituitary extract, in suitable doses*, administered three or four times a day. The improvement that may be seen after this method of preparation will be equally astonishing and gratifying.

CURRENT CANADIAN MEDICAL LITERATURE.

The Canadian Practitioner, August, 1905.

SOME CONCLUSIONS ON APPENDICITIS.

Dr. H. A. Bruce deduces some conclusions from his series of cases of appendicitis on which he has operated, numbering four hundred in all. Dr. Bruce is an advocate of the early operation in acute cases. The leading symptoms of an attack are given as follows: (1) Pain in the abdomen, occurring suddenly and usually of a colicky character in a patient in ordinary health; (2) Nausea or vomiting within a few hours (3) General abdominal tenderness, most marked on the right side; (4) Elevation of temperature coming on in a few hours or within twenty-four hours. The symptoms come on in the above order.

In the course of a few hours the pain becomes localized to the region of the appendix, when there will be rigidity of the right rectus over the inflamed area. A diagnosis should be made within twenty-four hours. When the pain is severe it usually indicates a severe attack. The pain generally subsides gradually, but may subside suddenly. If it does so within the first thirty-six hours it is a bad omen, as it means likely that the appendix has become gangrenous, or has ruptured, or to the spread of infective material. Secondary pain coming on after the first pain has subsided is not colicky, and is due to the implication of other parts. When this secondary pain is severe, it is caused generally by peritonitis following perforation.

The temperature may rise to 2 or 3 degrees above normal, but in some severe cases with gangrene, the temperature may not rise above 100. The temperature may drop to normal and yet the appendix be in a gangrenous condition. The pulse is of very little value in diagnosing the disease.

In 200 operations performed, in the interval, there was not a death; and 200 operations were performed during the acute attack, at varying periods of it, with a death rate of 14 or 7 per cent. Of the fatal cases only 2 were operated upon within the first forty-eight hours.

The operation in acute cases should be performed within the first twenty-four hours. If not performed within forty-eight hours there may be perforation. When the operation is performed before perforation occurs, it is not dangerous. When the operation is not performed until the second to the fifth day it should be very limited in character and be only the opening of the pus cavity, removing the appendix, if easily reached, and drainage. In instances where the abscess mass is not walled off,

the peritoneal cavity should be protected by gauze sponges. When the pus is reached, it should be mopped out with gauze. If the appendix can be found, a ligature may be thrown round it, when it can be removed. The gauze used to wall off the peritoneal cavity should be left in situ for several days. A perforated rubber tube and iodoform gauze should be placed in the cavity. At a later date in the disease an operation should be done to evacuate pus.

Suppurative cases may be classified as follows:—(1) Gangrenous or perforated appendix with a small amount of pus lying free in the cavity; (2) An abscess below or to the outer side of the cæcum and beneath the anterior perietal peritoneum; (3) An abscess circumscribed around the cæcum either below or on the inner side, and (4) Pus diffused through the general peritoneal cavity. All of these cases will require drainage and the first three can be walled off from the general peritoneal cavity.

The following conclusions are stated: (1) In all cases of acute appendicitis the physician should consult with a surgeon; (2) Until a positive diagnosis is made opium should not be given; (3) If a surgeon can be had at the beginning of the attack the operation should be done then; (4) When a surgeon can not be had the patient should be treated by exclusive rectal feeding, the stomach being washed out and then rested, and one-half ounce to one ounce of digested concentrated meat extract in salt solution every four hours by the bowel, and (5) While making the diagnosis resort to rectal feeding. After the operation rectal feeding, or merely saline solution, for two or three days is advised.

ABNORMAL REFRACTION AND EYE-STRAIN.

Dr. G. H. Burnham, of Toronto, deals with this subject in a full and scientific manner. The article first points out the various forms of errors of refraction. Definitions are given of hyperopia, myopia, astigmatism, and its varieties of simple, compound and complex. The statement is made that at least 50 per cent. of all eye diseases is due to errors of refraction.

Very rightly, attention is directed to the fact that many persons can see well and yet are suffering from eye-strain, due to the fact that they can overcome the error of refraction by muscular effort. By an effort they can focus, but the result is often very distressing. From 60 to 80 per cent. of headaches is due to eye-strain. In some cases the eyes feel easy, but the person complains of being languid. In these cases the true cause may be overlooked. Eye-strain may cause stomach trouble, such as vomiting, or disorders of the bowels. There may be severe pain in some part of the head, vertigo, eye and ear symptoms, epileptic fits, inability to fix the attention, and optic neuritis. In testing it is sometimes

very difficult to select the proper glass, or to make the eye take it after it is selected.

Dr. Burnham directs attention to the important fact that a glass that gives vision of 6-6 or 20-20 may not at all relieve the symptoms, and may not be the proper correction. This fact makes the experienced oculist very careful in prescribing glasses; or in condemning glasses that appear to correct the errors of refraction but do not appear to relieve all the symptoms. In hyperopic astigmatism there is secondarily spasm of the muscle and primarily irritation of the retina. In myopic astigmatism there is usually irritation of the retina and then spasm.

In discussing the mydriatics special praise is awarded to atropine, as the only one that can overcome the ciliary spasm in some severe cases, such as hyperopic astigmatism. He mentions a case in which he used a four grain solution, putting a few drops into each eye thrice daily for four months. Finally, the spasm was overcome and the person fitted with suitable cylinder without variation of angle. The relief was permanent. Iodide and bromide of potash internally are helpful. In myopic astigmatism the same treatment is called for, though it may not be required for so long a period.

The doctor sounds a word of warning against the practice of cutting muscle for the so-called heterophoria. A thorough test for all errors of refraction is the essential in all cases first. He thinks that no one should order glasses on one sitting, as this is very liable to end in failure. Attention is urged to the fact that over function of an organ may cause nerve-storms. It is claimed that general practitioners should learn how to refract eyes, as in this way many cases might be corrected that are not, and severe ones sent to a competent specialist. In this way the commercial optician could ultimately be driven from the field.

The Dominion Medical Monthly, July, 1905.

WILLIAM HARVEY.

Dr. W. J. Fischer has an excellent article on the immortal Harvey. He was truly a master mind. Harvey's life covered the long period of seventy-nine years, and was cast in one of the most momentous in British history. He was physician to Charles, and the author of *De Circulatione Sanguinis* and *De Generatione*. It is by these works that he is known, especially the former.

Harvey was born at Folkstone, 1st April, 1578. He went to school in his own town. He spent five years in King's School, Canterbury, after which he entered Caius College, Cambridge, from which he graduated in 1597.

He then went abroad and travelled in Germany, France and Italy. It was in this latter country that he studied medicine, electing as his alma mater, the University of Padua. While in Padua he came under the influence of Fabricius, the rector of the University, and soon formed a lasting friendship with him. He obtained his degree in medicine in 1602, which reads that "He had conducted himself so wonderfully well in the examination and had so shown such skill, memory and learning, that he had far surpassed even the great hopes which his examiners had formed of him. They decided, therefore, that he was skilful, expert and most efficiently qualified both in arts and medicine, and to this they put their hands unanimously, willingly, with complete agreement and unhesitatingly." In the following year he obtained his M.D. from Cambridge, and in 1604 became a member of the Royal College of Physicians of London.

For some years he practiced in London, and devoted much time to the study of anatomy, dissecting many animals. In 1607 he became a fellow of the Royal College, and shortly afterwards was appointed physician to St. Bartholomew's Hospital. He was solemnly obligated in his appointment to take no fee from the poor of the hospital who sought his advice. In 1581 Lord Lumley and Dr. Caldwell founded the Lumleian lectures, and in 1615 Harvey was appointed lecturer, a position he held for forty-one years. He is described as "A man of the lowest stature, round-faced, with a complexion like the wainscot; his eyes small, round, very black and full of spirit; his hair as black as a raven, and curling; rapid in his utterance, choleric, given to gesture, and used, when in discourse with any one, to play unconsciously with the handle of the small dagger he wore at his side."

Harvey was a great Latin and English scholar. In 1628 he published his book on the circulation, though he had done much of investigation some years earlier. His views were bitterly attacked by some and defended by others. It is stated, that as a result, his practice fell off very much. But Harvey became noted and his views steadily gained ground. His book is written in a very simple but clear style.

In 1618 he was appointed physician to James I, and, a little later, to Charles I. He was very close in his friendship to Charles I, and accompanied him constantly. He saw much of the struggles of the civil war. At the battle of Edgehill he had the two young princes in his charge, who afterwards became Charles II and James II. During this troublesome period his house was entered by those who were opposed to the Royalists and many manuscripts destroyed. Harvey greatly regretted this, and complained that while attending the King by command of Parliament he should be so treated.

In 1642 he was made a Doctor of Physic by Oxford. Next year he withdrew from St. Bartholomew's and settled in Oxford. He was elected Warden of Merton College, and continued to attract students, among whom was Charles Scarborough, who afterwards became physician to Charles II, and William III, was knighted and succeeded Harvey, in 1656, as Lumleian lecturer.

He founded the library of the College of Physicians, in which is placed his bust in cap and gown. Shortly before his death he was elected president of the College of Physicians, but declined on account of ill-health. He died of apoplexy, having suffered from gout for years.

The Montreal Medical Journal, July, 1905.

SANITARY SCIENCE AND THE VETERINARIAN.

Chas. H. Higgins, B.S., D.V.S., in discussing the above subject points out that human and veterinary medicine are closely related and that the sanitary matters of one bears upon those of the other. The veterinarian is necessarily a sanitarian. The tendency is for the veterinarian to follow that line of his profession which is intimately associated with sanitation.

The consumption of milk and butter renders it of much importance that supply of these should be free from disease. At this point the veterinarian and the board of health come in contact. The infectious diseases of animals are becoming subjects of much interest. Foot and mouth disease threatened the live stock trade of the United States, and hog cholera was a source of great loss in Canada. The latter is now almost eradicated and the former practically so. The use of mallein in detecting incipient cases of glanders and of tuberculin in diagnosing tuberculosis is accomplishing very much in the way of arresting these diseases by discovering their presence in an early stage. Milk may be contaminated by tubercle bacilli from the cow or through a small quantity of foecal matter getting into it. The milk may be rendered sterile by being pasteurized, but this destroys some of its valuable nutritive qualities.

Preventive inoculation and immunization are useful in Texa fever, South African horse disease, and rinderpest. The studies on immunity in animals are of the utmost importance as a means of discovering the laws of infectious diseases in the human being. The comparative study of diseases and bacteriology has done much in the past and holds out rich promises for the future.

CHORION EPITHELIOMA.

Dr. F. A. L. Lockhart takes up this subject, which still interests the medical world. It is well known that the trophoblasts burrow into the mucous membrane of the uterus and tubes, but also into their muscular tissues. These cells may disappear, or they may take on active changes, producing a very malignant disease known as chorion epithelioma. Sanger, in 1888, thought the disease was of a sarcomatous character, but this view is now abandoned for the one that it is a true epithelioma.

Chorion epithelioma has an intimate connection with pregnancy. It occurs in connection with moles in 30 per cent. of the cases, follows abortion 35 per cent., and full term labor in 35 per cent. In the rare instances in which it is met with in males and females before puberty and after the menopause it is due to teratomata. The active cause has not been determined, but the presence of lutein cysts in the ovary is so frequent that it appears as if an excess of lutein cells may have some bearing upon the etiology.

The prognosis is extremely bad, but some cases do recover, varying about 40 per cent. after abortions and 50 per cent. after moles.

There is usually severe hemorrhage which is difficult to control. Pain is often well marked, there may be a foul-smelling discharge and emaciation. Metastasis may take place to other organs, as the lungs, causing cough and dyspnoea. The os is patulous and the cervix soft, A soft mass may be felt in the uterine cavity. Under the microscope, processes like villi are seen, containing some connective tissue in the centre. Three varieties of cells are found. The most important are the large, multinucleated plasmodial cells. It is these cells which penetrate the uterine walls. The second variety is the small polyhedral cell with a large vesicular nucleus. The third form is the large polyhedral cell, which may be mono—or multinucleated.

The only treatment is removal, where such is possible. When this is impossible, remove as much diseased tissue as can be reached, and treating the parts by keeping them clean and aseptic.

FIBRO-CHONDROMA OF THE UPPER JAW.

This case is placed on record by Dr. Donald Hingston. The patient was 44 years of age, and was kicked by a horse in the face fourteen years ago. The tumor began five years ago. It was removed successfully and weighed three and a half pounds. It was composed of cartilaginous tissue, in which were embedded numerous small bony masses. A preliminary high tracheotomy was performed.

POISONING BY NITROUS OXIDE GAS.

Dr. C. P. Edgar reports two cases of poisoning by nitrous oxide gas. It has been noticed that during the manufacture of nitric acid certain gases are evolved, the inhalation of which has proven fatal. The symptoms in these cases vary considerably and the instability in the composition of the gases have rendered a study of these cases rather difficult. The gases are grouped under the terms "nitrous vapors" or "nitrous fumes," and consist of nitrogen monoxide, dioxide or trioxide, according to the dilution by the atmosphere.

In some instances there are tightness felt across the chest and a feeling of suffocation, with cough and bloody expectoration. These symptoms may soon pass off, or be followed by bronchitis. Sometimes there is indigestion, anæmia, malnutrition, cramps and vomiting.

In ten years, at the Nicholas Chemical Company, at Capelton, Quebec, two deaths have occurred, both due to œdema of the lungs. The task of cleaning out the tanks in which the acid has been stored is particularly dangerous, as the concentrated fumes are found under these conditions. In these two cases there was œdema of the lungs, the organs being full of bloody serum.

There is very little literature on this subject, and no antidote known. The convulsions that may occur are said to be due to a reflex action caused by the irritation of the minute sensory nerves of the respiratory tract. When these affect the lungs, heart or diaphragm, death may result.

TYPHOID FEVER IN THE ROYAL VICTORIA.

Dr. Hardisty gives a very careful resumé of 154 cases of typhoid fever in the Royal Victoria Hospital, Montreal, for the year 1904.

The average age was 20.76, the average stay in the hospital was 40.27 days, the average days of fever was 21, one case running 132 days, the temperature in one was 106°. In eleven cases there was typhoid fever in the houses they came from.

With regard to symptoms, the following points may be noted:— Diarrhœa was present in 43.5 per cent., while constipation was an early symptom in 20.7 per cent. Epistaxis occurred in 24.02 per cent., vomiting in 37.6 per cent., delirium in 12.33 per cent., chill in about 6 per cent., the rose spots in 81.16 per cent., the spleen was palpable in 43 per cent., Ehrlich's reaction in 49.3 per cent., the Widal reaction in 86.3 per cent., as early as the sixth day in some. The death rate was 5.84, relapses 9 per cent., complications in 37.6 per cent., phlebitis in 5 cases, pneumonia in 5, pleurisy in 3, empyema in 1, glossitis in 1, tonsillitis

in 3, hæmorrhage in 12, rheumatism in 1, erysipelas in 1, furunculosis in 3, pregnancy in 2, retention of urine in 7, acute nephritis in 3, subacute in 3, suppurative otitis media in 6, and catalepsy occurred in 1.

The Maritime Medical News, July, 1905.

IRRITATION OF THE PROSTATE GLAND.

This is the subject of Dr. Mayes Case's paper. He first gives a description of the normal gland; he then states that prostatic irritation is most frequent in young persons, following usually an attack of gonorrhœa. In these cases the trouble is usually very obstinate. There is feeling of weight in the perineum, a mucoid discharge, and incontinence or retention of urine. The prostate is tender and painful to pressure. The passage of a sound is quite painful.

In the treatment of these cases an anodyne is required, and for this tr. opii deod, m. 8, and tr. belladonnæ, m. 5 every six hours, till relieved, is useful. When the acute symptoms have disappeared, the passage of the steel sound, large size, every four days, is our most helpful treatment. It should be made sterile. In some cases the oil of sandalwood, or combined with saw palmetto, and cannabis indica are worthy of trial. These latter drugs are most useful in the chronic stage, and when the sound is being used.

INSURANCE EXAMINATION FEES.

This subject has been very freely discussed in the medical societies of the Maritime Provinces. The matter has been fully argued pro and con between those representing the medical profession and the insurance companies. At the recent meeting of the Medical Society of Nova Scotia the following resolution was carried:—

“That, in the opinion of the Medical Society of Nova Scotia, the minimum fee for life insurance examination throughout Canada should be five dollars; and that the Secretary be instructed to forward a copy of this resolution to the Secretary of the Canadian Medical Association.”

The New Brunswick Medical Society has taken a similar action on this matter.

CURRENT MEDICAL LITERATURE

MEDICINE.

Under the charge of A. J. MACKENZIE, B.A., M.B., Toronto.

A CASE OF APPARENT ADDISON'S DISEASE, WITH CURE.

Reported by Dr. W. Gilman Thompson.

The patient was a young man of 26, who came under the speaker's observation at Bellevue Hospital with all the classical symptoms of Addison's disease. He was very dull and languid, and while his face and hands showed very little pigmentation, the rest of the body was of a walnut or brown color, with leucoplakia on the chest. The buccal mucous membrane and hard palate also showed patches of pigmentation. The internal organs, so far as could be made out, were normal. He was suffering from an ordinary secondary anemia, the red blood cells being reduced to less than 2,000,000 and the hemoglobin to 20 per cent. He had constant vomiting, a very feeble pulse, and great prostration.

In addition to proper rest and diet, the patient was given adrenalin chloride by mouth, and gradually his nutrition improved, he gained in strength and became lighter in color. He remained in the hospital eight months, when he was discharged entirely cured, with a white skin and normal blood count. During his stay in the hospital the tuberculin test was applied three times, and each time there was a decided reaction to the injection, but there was no evidence of any tuberculous process unless the adrenal bodies were involved.

The question naturally arose, Dr. Thompson said, whether this was a true case of Addison's disease, or one of vagabond's disease simulating Addison's. The man had been a tramp for five years prior to his admission to the hospital, and admitted not having had a bath for two years. On the other hand, vagabond's disease would hardly have presented such a group of symptoms as were observed in this case, including the mouth pigmentation and tuberculin reaction. Under treatment, the red blood cells increased from 1,900,000 to 6,800,000, and the hemaglobin from 20 to 90 per cent.

In a somewhat similar but less extreme case observed at the Presbyterian Hospital some years ago, the patient improved markedly under the administration of adrenalin, and most of the pigmentation disappeared. That patient also reacted to tuberculin, although no evidence of tuberculosis could be demonstrated in the lungs or elsewhere in the body.

CACTUS GRANDIFLORUS.

In the *Medical Record*, June 3rd, Ellingwood advocates the use of the preparations of this plant, the night-blooming cereus, in preference to digitalis and strophanthus as a heart stimulant. He describes its mode of action as follows: It exercises a direct influence over the sympathetic nervous system, it restores normal action to the heart by acting directly upon the cardiac plexus, regulating the functional activity of the heart, it improves the nutrition and increases the contractile power and energy of the muscle through the cardiac ganglia and accelerator nerves. It produces no irritation of the heart muscle like strophanthus, or gastric irritation like digitalis nor is its action cumulative.

When the following indications for its use are present, it will act promptly and satisfactorily: When there is an irregular pulse due to feebleness of the heart's action with dyspnoea, weight and oppression in the chest, or when there is violence with irregularity of the heart action, which depends upon atonicity or enervation, and especially when there is a sense of constriction as of a band around the heart or chest, this remedy is indicated. Also when the heart muscle is enfeebled as in cases of progressive valvular inefficiency, or in mitral or aortic regurgitation with atonicity, or in functional irregularity of the heart when due to gastric irritation.

On the contrary, when there is violent heart action or persistent palpitation from increased tonicity or in the presence of a temporary exaltation of nervous or muscular tone this remedy is contraindicated. In the forms of heart weakness or irregularity due to tobacco, pericarditis, endocarditis, and the acute febrile diseases, it is found of great value.

POISONING BY WOOD ALCOHOL.

In the *Medical Record*, July 1st, Koller reports a typical case of poisoning by wood alcohol accompanied by blindness. The patient was a Russian Jew, aged 42; on Saturday he took about two ounces of whiskey, he had some nausea and vomiting that day and the next morning he noticed that things looked dimmer than usual. On Tuesday he was completely blind, all perception of light being gone. On Friday he presented himself at the clinic, when the condition of the eyes was as follows: The pupils were widely dilated and absolutely without reaction; the optic nerves of both eyes present the picture of a neuroretinitis of moderate intensity; the outlines of the discs are indistinct; the radiating nerve-fibres are opaque and somewhat oedematous and the blood-vessels are congested. In the macular region of both eyes are dispersed numerous yellowish, bright-shining little spots.

He first saw some light this day and under treatment had steadily improved until in two months he was able to see well, the right eye making more rapid advancement than the left, although in six months there were still some traces of the retinal trouble. Analysis of the whiskey showed that he had taken about 20cc. of pure methyl alcohol.

A CASE OF HEROINE HABIT.

In the *Medical Record*, June 3rd, Atwood describes a case of addiction to the taking of heroine which should be noted by those who have been prescribing this drug, under the impression that there is no danger of such a result.

The patient was a refined married woman, of 29 years, with a neurotic inheritance and a history of a cured morphine habit, ten years before. During operation for appendicitis she was given heroine as an anodyne with the assurance that it was harmless and that the habit could not be formed; but the effect was so pleasant that she continued taking it after recovery to the amount of $2\frac{1}{2}$ to 4 grains per day hypodermically. After a time it began to affect her health, she became thin, neurasthenic and debilitated, her digestion was disordered, she lost 50 pounds in weight, and became entirely dependent on the drug for ability for any exertion. Under treatment the drug was withdrawn, her health was built up and she showed complete recovery six months after.

COLD AFFUSION.

In the *Brit. Med. Jour.*, July 1st, Sir William Broadbent calls attention to the value of cold affusion in many febrile conditions but especially in delirium tremens. His method of procedure is as follows: The patient is stripped naked and lies on a waterproof sheet. A copious supply of ice-cold water is provided, and a large bath-sponge dripping with iced water is dashed rapidly on the face, neck, chest and body, he is then rubbed dry with a rough towel and the process is repeated a second and third time. The patient is now turned over, and the wet sponge is dashed on the back of the head and down the whole length of the spine two or three times, vigorous friction with a bath-towel being employed between the affusions. By the time he is dried and made comfortable he will be asleep.

LEUCOCYTHÆMIA TREATED BY THE X-RAYS.

In the *Brit. Med. Jour.*, July 1st, Melland, of Manchester, reports the treatment of four cases with very satisfactory results in leucocythæmia by x-rays. All the cases were well marked with spleen very much enlarged, reduction of haemoglobin and the characteristic changes in the

cells; the time of treatment was from four to ten months. It was applied to the region of the spleen and given twice weekly; no other form of treatment was used during this time. The second patient died of tuberculosis while showing great improvement from the primary disease.

The improvement in the blood ran on parallel lines in each case. The percentage of haemoglobin and the number of reds has gone up while whites have fallen; there has been diminution in the percentage of those varieties of leucocytes, increase in which especially characterises the disease—namely, the melocytes, basophiles, large lymphocytes, and eosinophiles with, at the same time, a rise in the percentage of the polymorphonuclear neutrophiles and a diminution in the number of the nucleated reds. Systemic improvement has been evidenced in the most marked manner by the change in the patients' general condition of health, increase of weight, diminution or disappearance of pain, improvement of appetite, and general subjective sense of well-being and ability to resume their daily occupations.

SURGERY.

Under the charge of H. A. BEATTY, M.D., M.R.C.S., Eng.
Chief Surgeon Canadian Pacific Railway, Ontario Division; Surgeon Toronto Western Hospital.

THE OPERATIVE TREATMENT OF FRACTURE OF THE PATELLA.

In *The Practitioner*, London, May, 1905, Rigby advocates the treatment of fracture of the patella by open operation because—(1) There is a gain in time of about six months by this method of treatment, (2) the operation ensures sound bony union with a perfect functional result.

The fragments of the patella may be wired or sutured together by the open or the subcutaneous operation. The arguments against the latter method of treatment are: 1. The wires must be removed in three or four weeks; 2, early passive movements cannot be thoroughly carried out; 3, the fractured surfaces cannot be freshened; 4, the blood and effusion in the joint remain untreated; 5, the torn tendinous expansions of the vasti are untreated; 6, exact coaptation of the fragments is out of the question. The open method practised by the author consists in: 1, Exposing the fragments by a vertical, transverse, or semilunar incision: 2, emptying the joint of blood clot, serum and torn tissue; 3, freshening the surfaces of the fragments; 4, passing wires through holes bored by a drill; 5, suturing lateral tears in the expansions of the quadriceps. Two silver wires should be passed, preferably through a semilunar incision. The wires should be buried, and in the author's experience do not cause irritation. Massage and passive movement of the joint should be

begun in about twelve days, and two day's later the patient should be allowed to get up. A table of twenty-one cases with clinical details concludes this article.

INDICATIONS FOR THE RADICAL CURE OF HERNIA BY BASSINI'S AND KOCHER'S METHODS.

In the *Roussky Vrach*, March 26th, 1905, P. A. Baratynski says that Kocher's method is best adapted for cases of inguinal hernia with slight anatomical changes in the inguinal canal, *i.e.*, a narrowing. In hernias with moderately marked anatomical changes the choice between Bassini's and Kocher's methods depends on the degree of mobility of the peritoneum and on the separation of the deep layers of the abdominal muscles from Poupart's ligament. If the peritoneal mobility is marked, Kocher's method is indicated, while if the deep muscles are widely separated from Poupart's ligament, it is best to use Bassini's method. Inguinal hernias with marked anatomical changes in the canal—that is to say, with a widely distended straight or oblique inguinal canal—require Bassini's method.

HAND STERILIZATION WITH SPECIAL REFERENCE TO THE USE OF OIL OF CLOVES.

In the *American Journal of Obstetrics*, March, 1905, J. C. Webster describes the following method: The hands are scrubbed for five minutes with any good soap and hot water, the latter being frequently changed. The skin is then dried with a sterile towel and rubbed for one minute with alcohol to remove any remaining moisture. When it is dry, unpurified clove oil is rubbed into the skin for four or five minutes and afterwards washed out with alcohol. Clove oil is a powerful solvent of fats and penetrates deeply into the skin. The unpurified oil is less expensive and is probably a better germicide (its impurities being acid in nature) than the purified oil. The hands thus cleansed are thoroughly rubbed with sterilized talc powder and covered with smooth dry rubber gloves which have been boiled for fifteen minutes. The skin of the hand is the same at the end as at the beginning of the operation. The sterile talc having been rubbed into all the irregularities of the skin is therefore very smooth. The operator should wear gloves of medium thickness which are made from a model of his hand, thus securing a perfect fit.

PNEUMATOCELE OF THE CRANIUM.

In the *Journal of the American Medical Association*, May 6th, 1905, L. L. McArthur reports one personal case of this rare condition and

tabulates a synopsis of thirty-three cases he has found in the literature. The conclusions reached by Costes, of Bordeaux, in 1859, regarding this affection hold good to-day. They are: (1) Pneumatocèles are very rare. (2) They always depend on perforations of the bony walls. (3) They are always tympanic. (4) They are more or less reducible by pressure. (5) They can take their origin from the mastoid or frontal sinuses only. (6) They are of very slow and indolent formation. (7) They are never dangerous except from complications (infections).

GUNSHOT WOUND OF THE PANCREAS.

In *The Annals of Surgery*, May, 1905, Connell finds twenty recorded cases of this injury in nine of which there was recovery. Twelve were operated on with seven recoveries, the operation being performed from one to nine hours after the injury. There are no pathognomonic or even suggestive symptoms of injury of the pancreas in gunshot wounds of the abdomen. The probable course of the bullet is the chief guide. In wounds of the lesser omentum and the posterior wall of the stomach, injury of the pancreas must be excluded before the abdomen is closed.

FOREIGN BODIES IN THE APPENDIX.

L. J. Mitchell in the *Medical Record* gives a list of the foreign bodies found in the appendix during his service as coroner's physician, in a series of 1,600 necropsies. One or more grape seeds were present in eight cases, one or more shot in three cases, and fragments of bone in two cases. Other objects were a portion of a shingle nail, a globule of solder, a piece of nutshell, a portion of the vertebral column of a small fish, and fragments, apparently, of ash or stone. None of the appendices containing these bodies showed any signs of inflammation, either past or present.

ON THE TREATMENT OF CYSTITIS BY INSTILLATIONS OF OIL OF GOMÉROL.

Haim (*Ann. d. mal. d. org. génito-urin.*, Paris, 1905, June), in his Thèse de Paris, 1905, relates his experience in the treatment of cystitis, particularly that of tuberculous origin, by gomérol. This drug, he considers, takes a very high place among the therapeutic agents directed against vesical inflammations. From physiological experiments it has been shown to have no toxic or caustic action, and that when employed as instillations of gomérol oil, 10 to 20 per cent., it is absolutely innocuous. The oil is a powerful antiseptic, and, in addition, is analgesic.

It may therefore be employed to lubricate urethral instruments. When instilled into the bladder the painful symptoms are ameliorated, and may even disappear completely, and the patient desires the repetition of continuation of the treatment. The capacity of the bladder increases, and the frequency of micturition is diminished. Diminution or even disappearance of certain pathogenic bacteria is observed. On cystoscopic examination, it is found that the vesical lesions improve more rapidly, as a rule, than under the influence of the antiseptic agents generally employed. The general condition of the patient, often precarious at the beginning of treatment, improves coincidentally with the amelioration of the local lesions. Cathelin, who criticises Haim's paper, expresses a favourable opinion of the method of treatment advocated in it.—*Edinburgh Medical Journal*.

GYNÆCOLOGY.

Under the charge of S. M. HAY, M.D., C.M., Gynæcologist Toronto Western Hospital; Consulting Surgeon Toronto Orthopedic Hospital.

CÆSAREAN SECTION FOR PLACENTA PRÆVIA AN IMPROPER PROCEDURE.

In *The Journal of the American Medical Association*, May 20th, 1905, Rudolph Weiser Holmes presents a statistical study of twenty-five reported cases, with the comparative mortalities of 1,257 cases of Cæsarean section and 4,731 cases of placenta prævia treated obstetrically.

Holmes reaches the following conclusions:—(1) Cæsarean section for placenta prævia lowers the foetal mortality 30 per cent. and raises the maternal death rate nearly threefold. Approximately the life of one mother is taken to save the uncertain existence of one baby. (2) Unquestionably some maternal deaths have been suppressed, as in Cæsarean sections for pelvic indications. (3) A rigid os is one of the rarest complications of placenta prævia. Undoubtedly most cases of so-called rigid os are simply instances of cervix unprepared for dilatation, or a misconception based on too brusque and rapid attempts to dilate or to extract. A true cicatricial cervix, and rigid cervix of old primiparæ, may offer an indication for Cæsarean section in placenta prævia. (4) Pelvic contractions are indications for Cæsarean section in the presence of a prævial hæmorrhage; the pelvic contraction, not the prævia, is the determining indication. The earlier the interruption of gestation, *cæteris paribus*, the more may pelvic deformity be disregarded. (5) In general, the presence of a placenta prævia will not be

recognized before hæmorrhages appear. (6) Cæsarean section for placenta prævia never will have so low a maternal mortality as when performed for a pelvic indication. Repeated examinations by the physician and his consultants must be made for diagnostic purposes; often a vaginal tampon must be introduced as a temporizing measure, at least until the woman may be transported to a hospital or preparations made at home for the laparotomy. The acute anæmia and finally the anatomical conditions post partum all render the operation a peculiarly dangerous one. (7) Placenta prævia cases appropriate for Cæsarean section generally will demand the procedure irrespective of the foetal condition, as the primal motive should be to save the mother. (8) Cæsarean section for placenta prævia should only be considered a *dernier ressort*. (9) If an abdominal operation is forced on the obstetrician, he should remove the uterus as a prophylactic against hæmorrhage and infection. (10) The profession should await the adjudication of the field for Cæsarean section in placenta prævia by obstetric authorities before resorting to the operation.

THE TREATMENT OF GONORRHŒA IN WOMEN.

In *The Therapist*, February, 1905, J. Ferrua reports a number of cases of gonorrhœa in women, in the treatment of which sodium lygosinate has given most excellent results.

Ferrua comes to the following conclusions:—

(1) Early, prompt detection of gonorrhœal germs renders it possible to avert infection of the cervical canal and endometrium.

(2) Though neglected, the disease is after months yet amenable to treatment with sodium lygosinate (vaginal irrigations and intra-uterine injections), similarly as it would have been in the first stage; but the cure is not so speedily attained.

(3) By its highly germicidal properties, sodium lygosinate promotes retrograde metamorphosis of the morbid vaginal and uterine tissues.

(4) All observers agree that it at once decreases the number of gonococci and diminishes the purulent discharges.

(5) Sodium lygosinate is a non-irritating substitute for silver nitrate, argentamin, protargol, ichthargan, itrol, argentum colloïdale, albargin, argonin, soziodol zinc, soziodol sodium, mercury bi-chloride, which we have tried comparatively.

(6) In chronic gonorrhœal endometritis it protects the patients from the danger of curettage. No remedy known to me is capable of doing so much in all localizations of gonococcic infection as sodium lygosinate.

(7) Physiologically tested, it is always uniform in strength and highly active.

(8) Under the use of sodium lygosinate, if proper measures are adopted and care is taken to avoid a relapse, a cure is the rule.

(9) We are indebted to Dr. Franz Paradi, Assistant Physician at the Clinic for Skin and Venereal Diseases of the Royal Hungarian Franz Josef University at Kolozsvár, and to Prof. Dr. von Marschalsko, for the exhaustive investigations through which the chemical and therapeutic properties of this extremely interesting and valuable germicide have been brought to our notice.

TUBAL PREGNANCY.

In the *Berliner Klinische Wochenschrift*, July 3rd, Hofmeier reports a case of a woman, aged twenty-seven years, in whom there was a recurrence of a tubal pregnancy in the left tube. On the first occasion the sac was removed from the tube. The second pregnancy took place in the portion of tube which remained.

DRAINAGE IN DIFFUSE SEPTIC PERITONITIS.

In the July *Annals of Surgery*, Knott comes to the following conclusions:—

1. Operations for diffuse septic peritonitis should be made as quickly, and with as little manipulation, as is compatible with thoroughness.
2. Evisceration, partial or complete, greatly increases shock and the prospects of a fatal result.
3. The generous use of clean hot water will most thoroughly cleanse the infected cavity with the least traumatism.
4. Drainage is simplified by collecting the peritoneal fluid at one point, where drains may be easily placed. This is best obtained by elevating the head of the bedstead and allowing the fluid to gravitate to the pelvis.
5. Results following the surgical treatment of diffuse septic peritonitis will be improved should each individual operator adopt some definite form of procedure in such cases, which, being well understood by operator and assistants, may be methodically, speedily, and thoroughly carried out.

RECURRENT TUBERCULOUS PERITONITIS AFTER INCOMPLETE OPERATION.

Dr. John B. Shober, of Philadelphia, writing in a recent issue of the *N. Y. Med. Journal*, on the above subject, concludes the article as follows:—

“During fifteen years of active gynecological work, I have either assisted at operation or personally operated in many cases of tuberculous peritonitis. My experience coincides with that of the Mayo Brothers, namely, that when the primary focus is removed, the cases are usually cured or greatly relieved. In the majority of the cases that have come under my observation, the diagnosis of tuberculous peritonitis was not made until the abdomen was opened and the true nature of the trouble revealed.

“As a result, therefore, of personal experience and a study of the literature of the subject, I have reached the following conclusions:—

1. “Until we have more precise methods of differentiation, most cases of tuberculous peritonitis will be operated on under some other diagnosis.

2. “Coeliotomy and removal of the primary focus of the disease offer the best prospect of cure. The abdomen should be thoroughly irrigated and closed without drainage.

3. “A short course of x-ray treatment, immediately following operation, is advisable in all cases, but it is especially important in those cases in which the primary focus has not been removed.

4. “Should recurrence take place in these cases, a secondary operation to remove, if possible, the primary focus, is advisable; and this operation should be followed by a course of x-ray treatment.”

TREATMENT OF RETRO-DISPLACEMENTS OF THE UTERUS.

Dr. C. A. Stewart, of Duluth, Minn. (*Milwaukee Medical Journal*, April), offers a modification of the usual method employed for the relief of this condition. After breaking up the adhesion, the uterus is replaced in position and each round ligament is caught by a uterine tenaculum at a distance of from one to one and a half inches from the uterus, depending on the amount of slack that the replacement of the uterus leaves in the ligament. Gentle traction is then made, sufficient to make the ligaments taut, when it will be seen that the vesicouterine peritoneum has been lifted up so that it forms a sulcus. The sides of this furrow are overlapped and stitched together with a fine catgut suture, which, as it approaches the round ligaments, tends to draw them together so that when it is completed the two ligaments are in close juxtaposition. The loop formed by the slack in the round ligaments is then stitched together with chromicised catgut, after which they are folded towards each

other, fastened together and to the anterior aspect of uterus. A reasonably extensive experience has convinced the doctor that his method possesses certain points of excellence that entitle it to consideration, such as facility of execution, the certainty of securing equable support to the uterus by the uniformity of traction on each round ligament, and the added element of strength afforded by stitching the folds of peritoneum together so that they are able to aid in giving support to the replaced organ.—*The Medical Review of Reviews*.

OPHTHALMOLOGY AND OTOTOLOGY.

Under the charge of G. STERLING RYERSON, M.D., C.M., Professor of Ophthalmology and Otolology, University of Toronto. Medical Faculty.

THE EFFECTS OF RADIUM UPON THE EYE.

E. Bock experimented with radium on a rabbit. It caused conjunctivitis, opacities of the cornea and iritis, severe inflammation of the skin of the lid and falling out of the lashes.

In some cases it was followed by atrophy of optic nerve. The epithelium and endothelium of the anterior portion of the eye were totally destroyed in other cases.

THE CURE OF TRACHOMA BY RADIUM.

H. Cohn employed this agent in the cure of trachoma. He used a crystal one milligramme in weight, enclosed in a small tube three cm long and two mm in diameter and with that he touched every follicle. These disappeared in a remarkably short time. Cohn treated three cases in this manner without injurious effect upon the vision or lids.

COFFEE AMBLYOPIA.

A. E. Bulson, in *Amer. Jour. of Ophthal*, Feb., 1905, reports two cases characterized by lessened vision, headaches, dazzling, contraction of the visual field, twitching of the lids, and spots before the eyes, due to overuse of coffee, there were no changes in the fundus. Pilocarpin, iodide of potassium, strychnine and abstention from coffee brought about a cure. Relapses occur when coffee is used again. The coffee gives rise to gastro-intestinal irritation and formation of ptomaines which seem to affect the ganglion cells of the retina and optic nerve very much as quinine does. Bulson believes that coffee amblyopia is much more common than is supposed.

NITRIC ACID BURN OF EYEBALL WITH EPITHELIAL MUCOUS GRAFTS.

C. A. Veasey, *Ophthalmology*, July, 1905, relates the case of a chemist into whose eye pure nitric acid was splashed. The whole ocular and palpebral conjunctiva of the right eye was badly burned. Not a blood vessel or any sign of vascularisation was to be seen. The cornea was steamy. During the third and fourth days, the conjunctiva sloughed. One week after the accident, the conjunctiva was grafted with portions of mucous membrane obtained from the inside of lower lip. The grafts adhered and eventually a fairly good moveable eye was obtained.

SYMPTOMATOLOGY OF ACUTE OTITIS IN CHILDREN.

Charles Gilmore Kerley, M.D., of New York, remarks, in a recent issue of the *N. Y. Med. Jour.*, that acute otitis in the young is probably more frequently overlooked by the practitioner than is any other disease of children. This is through no fault of his own; it is because of its indefinite manifestations, and faulty teachings as to the symptomatology of the disease. If you search many of the works on otology you will find that the symptoms laid down are dependent almost exclusively upon evidences of pain—earache—the pain being complained of by older children or manifested by vigorous crying in the very young, tossing of the head from side to side, head rolling, ear tugging, crying out in sleep, disinclination to rest the head on the affected side, pain upon manipulation of the ear—in short, we have been taught that there is invariably some manifestation of pain located in the ear or in the adjacent structures in all cases of acute otitis in infants and young children.

Every child had fever. With but few exceptions the otitis developed during the convalescence of an acute process elsewhere; and the ear involvement was suspected because of a persistent elevation of the temperature for which no other cause could be discovered. The fact that fifty-eight of the cases, or eighty-one and a half per cent., occurred with, or followed non-specific, inflammatory conditions of the upper respiratory tract, such as amygdalitis, grippe, and catarrhal cold, emphasizes the necessity for frequent aural examination during or following such disorders; particularly when there is an elevation of the temperature—a temperature which in the absence of definite clinical signs, we are apt to look upon as possibly due to chronic grippe, malaria, typhoid fever or dentition.

The most interesting factor in the series was the absence of pain or localized signs by manipulation in fifty of the cases, or sixty-nine per cent. Among those included in the pain group, twenty-two in number, there are some which perhaps should not be so recorded. In

these there was no sign of pain, as we generally expect to find it. Among the pain group are included those who were very restless, who slept poorly, those who evidenced any great discomfort. Upon discovering the ear disease and noting the relief which followed incision of the drum membrane, it was fair to assume that the source of discomfort rested in the ear. Had it been left for the usual signs of pain or tenderness of the parts, in fifty of the cases a diagnosis of otitis would not have been made when it was. Six were seen in consultation because of the unexplained, continued fever. Nine had been treated by other physicians who had failed to discover the source of the continued fever. In none of these had ear involvement been suspected, because of the absence of pain and localized signs.

The records of these seventy-two cases tell us that we have not completed our examination of sick children until there has been a thorough examination of the condition of the middle ear.

EXOPHORIA.

W. H. Roberts, Pasadena, Cal., (*Journal A. M. A.*, August 12), finds that a troublesome degree of exophoria can be corrected by systematic exercise with prisms. He begins with weak prisms, bases out, rapidly increases the strength, and has the patient's attention drawn to a point of light six meters distant. He interposes himself between the light and the patient, holding a ruler at first fourteen inches in front of the eyes and backs gradually toward the light, and when he reaches this he suddenly exposes it. If the light appears single after the transfer of the gaze to it, he has the patient look steadily at it for a few seconds, then, after closing the eyes for two or three seconds, if it still appears single on opening them, he goes through the exercise again with stronger prisms. He usually adds one or two degrees each time till 25 or 30 degrees are readily overcome. After the exercise, the patient should rest with closed eyes until somewhat recovered from the excessive convergence. He supplements the office exercises by giving the patient a pair of 8 or 10 degree prisms in a properly fitting straight frame, with or without distance correction. He has him practice with these for about ten minutes morning and evening till the light can be fused at once, at a distance of six meters. As the muscles strengthen, once daily will suffice. It may be necessary to increase the strength of the home prisms two or three times, according to the results obtained. The treatment should be persisted in till the Maddox rod shows from $\frac{1}{2}$ to 2 degrees of esophoria for distance, and the von Graefe test shows orthophoria for near. It is well to advise the patient that moderate exercises will be needed for an indefinite period after the treatment to keep the muscle power gained. He reports a number of cases illustrating his method and its results.

ORBITAL SARCOMA.

G. O. Ring (*New York Medical Journal*, June 10, 1905) says the difficulty in accurate diagnosis under certain conditions entirely justifies an exploratory incision with removal of a section of growth for microscopic study, said exploration likewise serving to determine the ramification of the tumor.

The brilliant results achieved by a number of accurate observers in the field of Roentgen ray therapy justify the immediate tentative application of the method before any radical operation is attempted. If unsuccessful in removal of the growth, the virulence of the latter will probably be decreased and the dangers of metastasis lessened (Leonard.)

If the sarcoma is encapsulated operative intervention without orbital evisceration promises a successful outcome.

In view of the almost constant recurrences after orbital evisceration, the removal of the growth itself is regarded as sufficient unless the periosteum or bony wall is involved.

The encouraging results reported from the cataphoric sterilization of malignant growths in other parts of the body seem to warrant the utilization of this method in the orbit, due care being exercised as to strength of current used (Massey).

Future experience must determine whether better results will be achieved by using this method for the original growth or reserving it for recurrence *in loco*.

If operation has been performed and the growth has recurred, we have at command these two valuable methods of attack.—*The Medical Age*.

OTITIS MEDIA, ACUTE SUPPURATIVE.

Adenoid vegetations, especially in children, are frequently exciting and always predisposing causes of acute suppurative otitis media and should be removed. When pus does form in the tympanic cavity it should be evacuated, the sooner the better; a properly performed paracentesis being preferable in every way to spontaneous rupture. Too vigorous after-treatment is to be discouraged. Most cases of chronic suppurative otitis media are the result of neglect or improper treatment during the acute stage.

When the mastoid symptoms do develop, energetic treatment is indicated; operation is far less dangerous than disease if not promptly checked by less radical measures. C. R. Elwood (*Journal of the Michigan State Medical Society*, June, 1905).

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EDITORIAL.

TORONTO GENERAL HOSPITAL.

We take pleasure in giving our readers the full text of the rules recently adopted for the government of the Toronto General Hospital. We leave it with our readers to judge whether these rules are calculated to make the institution popular with the medical profession. The following are the rules :—

1. No professional fee, directly or indirectly, shall be charged by any member of the staff for patients who pay \$3.50 per week, whether the payment is made on their behalf by the city, by some friend or society, or by themselves. All patients of every sort paying \$3.50 per week shall be attended absolutely without professional fee, directly or indirectly.

2. It is desired that there shall be co-operation between the hospital authorities and the attending physicians and surgeons for the purpose of eliminating as far as possible from the \$3.50 per week class those who are able to pay for a semi-private ward.

3. All patients admitted on city orders shall be placed in rotation under the seniors in medicine, surgery and other departments, and under the assistants during their term of service.

4. Patients for whom \$3.50 per week is paid, either by themselves or by their friends, shall also be placed in rotation under the members of the staff as in the foregoing. If, however, a member of the staff sends to the hospital patients who are under his care in his private practice, with the request that they be allotted to him, or if patients are sent by a physician or surgeon who is not a member of the staff, requesting that they be placed under the care of some certain member of the staff, the admitting officer shall follow such instructions, with the limitations provided in the following paragraphs.

5. All purely gynæcological cases paying \$3.50 per week, whether city order or cases paid for by the patients or their friends, shall be placed under the charge of the gynæcologist or their assistants. Surgeons and assistant surgeons on the staff may attend their special cases paying \$3.50 per week, except gynæcological, in the pavilion, provided the wards of the pavilion are not required for gynæcological cases.

6. Members of the medical staff may treat their special patients paying \$3.50 per week, only when they are medical cases. Surgical members of the staff may treat their special patients paying \$3.50 per week, only when they are surgical cases.

Members of the Pathological staff may treat their special patients paying \$3.50 per week only when they are medical cases. Obstetricians and gynæcologists shall not treat their special patients paying \$3.50 per week in either the medical or surgical wards of the hospital.

A physician of the Out-patient Department, after five years' service, may have one special case paying \$3.50 per week in a medical ward, when such case is sent into the hospital by himself, provided that under no circumstances such patient comes through the Out-patient Department. A surgeon of the Out-patient Department, after five years' service, may have one special case paying \$3.50 per week in a surgical ward, when such case is sent into the hospital by himself, provided that under no circumstances such patient comes through the Out-patient Department.

7. Cases treated in the Emergency Hospital by the assistant surgeons or physicians shall be treated by them when removed to the General Hospital.

8. Surgeons who are not members of the staff, who desire to perform operations in the theatre, may do so on private and semi-private patients only, with the approval of a member of the surgical staff, provided that such member be present at the operation.

9. All autopsies shall be performed by the pathologists.

THE TORONTO WESTERN HOSPITAL.

The Toronto Western Hospital has just issued the following letter to the members of the medical profession in Toronto. Its terms, however, are applicable to any physician in the Province:—

DEAR DOCTOR,— The Board of Governors of the Toronto Western have much pleasure in making the following announcements to the medical profession:—

1. All the beds in the Hospital, except such as may be required for city-order patients, are at the disposal of all medical practitioners in good standing.

2. A new building has just been completed for male and female semi-private patients, at the rate of \$7 per week. This building is entirely separate from all others.

3. Another new building on a separate portion of the grounds and completely isolated, is ready for the reception of obstetric cases. The prices will range from \$10 to \$25 per week. The rooms are all private.

4. The contracts have been let for another handsome new building for private ward patients. This building will be ready for occupation by the end of the year.

The Toronto Western Hospital has always treated the medical profession in a generous spirit, and is happy to be in a position to make the above statements regarding its additional accommodation. The governors would esteem it a favor if you would visit the hospital and acquaint yourself with its facilities to care for your patients, both medical and surgical, under your own professional attendance.

MEDICINE, PRESENT AND PROSPECTIVE.

Such is the title of Dr. Maudsley's address before the British Medical Association. It is but faint praise to say that such addresses are rare. It was the able effort of an eminent physician and prepared for a great occasion.

He spoke out freely and fearlessly—but none too freely or fearlessly—against the custom of coining new, unpronounceable and, often, meaningless medical terms. It is said of Sir James Paget that, when advanced in years, he dropped into a medical society he took an active interest in when a young man, and made the remark that the members were discussing the same problems, but under new names. The plea of Dr. Maudsley is for a simple form of medical language.

The means of preventing disease are then reviewed in calm and judicial manner. Two features of preventive medicine are mentioned. One, that of controlling the infectious toxic and external causes of disease, and the other that of correcting bad hereditary tendencies. Dr. Maudsley has evidently not lost the belief in heredity. He thinks that it is shutting our eyes to the real truth to regard tuberculosis as wholly a matter of germs. In this subject of heredity his words are weighty and wise, and, put in plain language, mean that there is such a thing as tendencies that may become intensified or weakened according to the influences of marriage. But little can be hoped from the children of diabetic on one side and on the other side a parent with insanity in the family. On the first aspect of preventive medicine much progress has been made, while in the second not so much or almost none.

Attention is paid, and properly so, to the origin of disease in the faulty methods of living. Fresh air is needed for health and yet many carefully exclude it from their homes; proper food is a requisite of vigor and yet improper food is constantly consumed; and regular and moral habits are conducive to physical well-being, and yet many live in the most irregular and dissolute fashion.

In a truly philosophical way the chemistry of the body, resulting in every form of physical and mental activity, is passed before our mind. It is here that Dr. Maudsley attains to the climax of his able address. The chemistry of an organ is now coarse, indeed, as compared with the chemico-vital changes that go on in the most minute cell, or speck of protoplasm. The very exercise necessary for health may produce waste products that would poison the body were it not for the fact that they are gotten rid of by other chemical processes. But all this wonderful chemistry becomes distanced when the phenomena of radial activity are recalled.

This leads up to the conclusion that mind and body influence each other. In health, the influence is physiological, but it may become pathological. As imagination may kill, so also may it cure.

UNITED STATES RAILROAD CASUALTIES.

The following article, from the *Toronto Globe* of recent date, is worthy of careful study:—

The official figures respecting casualties on United States railroads for the year 1904 are the subject of thoughtful comment in a number of the newspapers of that country. It is shown that 10,046 people were killed, of whom 441 were passengers, and 84,155 injured, a total casualty list of 94,201 compared to which the losses including those of both sides in many of the most important battles of the Russo-Japan war, are insignificant. *The Springfield Republican* compares the figures with some of the similar returns available regarding the railways of Great Britain and Ireland, and finds that the result is not at all creditable to the railroads of the United States. The latter killed one passenger to every 1,622,267 carried, and the British roads one to every 199,758,000. In regard to passengers injured the ratio is respectively one to every 78,523 carried, against one to every 2,244,472. United States roads killed 3,632 of their 1,296,121 employees, and the British roads seven of their 71,007. There were 67,067 employees injured on United States railways and 114 on those of the United Kingdom. In other words, with an aggregate staff of employees seventeen times stronger than those of the British railways, the casualties on United States roads were nearly 600 times more numerous. Of the 5,973 persons killed and 7,977 injured on United States railroads, outside of employees and passengers, the deadly level crossing, it is believed, was responsible for the largest percentage. Similar statistics are not available regarding British railways, but *The Republican* believes the difference on this point would be found to be quite as striking as on the others.

After making all allowances in favor of the United States railroads, the paper quoted holds that "the casualty record still rises so high as to be without excuse and to constitute a national disgrace," and concludes: "The plain fact of the matter is that human life in American railroading is held in lower esteem, compared with the dollar, than among foreign railroads. How otherwise are we to dispose of the fact, for example, that American railroads have been so slow in adopting block-signal systems long after their use has become general in Great Britain and well tested in efficiency?"

THE PROLONGATION OF LIFE AND THE ALLEVIATION OF SENILITY.

How to reach old age and pass through it comfortably when it does come have been favorite topics for many a pen. Among those who have discussed the subject may be mentioned favorably Dr. Charles G. Stockton, who dealt with these subjects in his address on medicine at the American Medical Association.

In an early portion of his address he quotes from Metschnikoff to the effect that "in senile atrophy the same condition is always present, the atrophy of the higher and specific cells of the tissue and their replacement by hypertrophied connective tissue." Here we have a fundamental condition of old age. The higher, more organized and specialized cells give way, and their place is taken by the lower tissue forms, the connective. This aspect of the case throws much light upon the whole problem of senility.

The address calls attention to the care that is paid to the influence of heredity in the breeding of stock, but that there were no restrictions on marriage. It is urged that it would seem reasonable that something might be done to limit the liberty of entering into the marriage contract where there is some well known hereditary defect or taint, or in such cases as the syphilitic. Every effort should be put forth to educate the public to avoid marriages with families in which freaks, degenerates and incompetents, or in which a tendency toward lowered nutrition, too early maturity, or premature senility were frequent events. This affair is not one of a generation. The welfare of the offspring depends very much upon the stamina of the germ plasm, and the proper evolution of this is a matter of generations. The germ plasm of the race is the most important which concerns it. The thought is thrown out that a bureau of information might be established by means of which a person could obtain correct information regarding the heredity of a

person, and the diseases to which he or she may be liable. In this way it would be possible to obtain a race that would be practically immune to tuberculosis, insanity, alcoholism, epilepsy, etc.

If disease is to be limited, a positive effort must be made along the lines of selection. The duration of mid-life or the main working period depends upon the inherited vigor of the tissues and upon the environments in which the individual is placed. It might be an apparent hardship to prevent the syphilitic marrying, but it would be of the utmost benefit to posterity by the prevention of all the physical disasters that come from inherited or acquired syphilis through such persons marrying. A man has no more right to beget disease through heredity than he has to spread contagion to other people. By such efforts along the line of selection much could be done to prolong the working years and lessen the infirmities of age. It is wrong to allow the defectives to dilute and weaken the standard of the race. The rights of the offspring should be placed above those of the parent. The race is suffering from this extreme application of individual rights. The principle involved in the judicious restriction of marriages is on a level with the interference with the individual liberties in the case of quarantine.

In the matter of old age, attention is given to the important influence of good teeth in the maintenance of health. The individual should take care of his teeth, as such will do much to prolong life and improve the conditions of age. Then, again, the proper selection of glasses, so as to enable a person to keep up his interest in affairs, is also of great moment, as one of the most valuable aids to health is the habit of being interested in some duty.

One of the most important of all the subjects in the avoidance of pre-senility and its ills when old age does come, is the avoidance of arterio-sclerosis. The condition of the skin, the kidneys, the digestive functions, the blood pressure, should all be passed under observation. If these be neglected the confirmed condition may fasten itself upon the individual. Much of the trouble in arterio-sclerosis is due to auto-intoxication, a faulty relationship between the anabolic and the katabolic processes. Too much waste in the system means too much work for it to do; and this means injury. Auto-intoxication increases the blood pressure and lends a strong helping hand in the production of hardened and diseased vessels. Much of the depression and pain, and the fatality of many diseases in the aged are due to this condition of the arteries. Most of the complaints of the old are toxic in origin. Even in the advanced cases of arterial degeneration something may be done to render life more enjoyable by lessening toxæmia. Old age is repulsive when it is pathologic, but is beautiful when it is physiologic.

YELLOW FEVER.

Some points in the Southern States have suffered severely of late from yellow fever. As science advances, superstition dies, and people no longer rush from the infected areas, or resort to incantations to arrest the spread of such a disease.

It is well known now that the disease is spread by a certain variety of mosquito, the *slegomyia fasciata*, which abstracts blood from the sick and then infects the well by biting them. The whole question of preventing the spread of the disease lies in preventing the access of the mosquito to those who are suffering with the disease.

This, one would think, should not be an insuperable task. It should surely be possible to isolate the sick that the mosquito could not reach them. This can be accomplished by a wire cage, or by surrounding the patient by fine netting.

An experiment was carried out at Rome about two years ago, when two healthy young men remained for some time in a malarial area. One of these remained in a cage made of fine wire, with meshes too small for the anopheles to enter. He remained perfectly well. The other young man took no such precautions, and became the victim of ague.

This method of isolation, one would think, would be cheap and easily carried into effect. It would be effective.

THE BRITISH MEDICAL ASSOCIATION.

The meeting of this Association for 1906 is to be held in Toronto. With this decision of the British Medical Association the medical profession in Canada are in hearty accord. When the Canadian Medical, at its London meeting, in 1903, moved in this matter, we urged that the invitation be accepted, and bespoke for the visiting members of the association a most cordial welcome. We are glad now to be in a position to announce that the invitation has been accepted.

To make the meeting of 1906 the greatest in the history of this great medical association should be the ambition of the profession of this country. To do this, however, means that everyone must do his duty. There is much work to be done, and, therefore, there will be something for all to do. The preliminary arrangements should be effected at the earliest moment.

This is a great occasion and should not be treated in any narrow or niggardly spirit. The British Medical Association is a truly imperial gathering, and what it does affects for weal the entire Empire. the Federal Government, the Provincial Government, and the Municipal

Government of Toronto, should come forward liberally to aid the various committees with the requisite funds to make all needed arrangements in a thoroughly becoming manner. But it is also a rare opportunity which many of our wealthy citizens ought to gladly avail themselves of, for such opportunities for the noblest of all uses of their money come but seldom. We hope that many of them will come forward in a manner worthy the event.

Then there is the share that must fall to the lot of the profession itself, and in this part of the arrangements and preparations we have no fears. Whatever else may fall short of our highest hopes and desires, it will not be that portion which the medical profession of this country shall have in charge.

UNITY, PEACE AND CONCORD.

On another page we publish the address of Professor Osler, his farewell one to the profession of America. It is worthy of close study.

His words are of special interest to the student. When one who has accomplished so much regrets many opportunities which he had lost, how much truer is this of those who habitually lose so much of their time and let slip so many chances of *doing* and *becoming*.

Dr. Osler has a keen sympathy for the dreamers, the idealists, those who make for the conditions that ought to be, but may never be. In this he is not alone. Plato, Dante, Goethe, Emerson, Carlyle, and many others were idealists, dreamers; and, yet, how much we owe to them, nor could the world have done well without them. It is the ideals of nations and the ideals of men that have made the history of the world, and been the foundation stones of its progress.

Medicine is a world-wide profession. Everywhere its aims are the same, and a discovery made in one country is for the immediate benefit of all others. Britain has no monopoly of vaccination, nor Edinburgh or Boston of anæsthesia. As medicine advances we are learning more about what diseases are curable, and what are preventable. But to prevent is the highest ideal of the healing art. The giants who formerly terrified the human race under the names of the plague, smallpox, cholera, etc., are now being chained, a case, a real case, of *Prometheus vincetus*.

Mention is made of the interstate and interprovincial barriers to practice. Once more Dr. Osler makes an appeal for the abolition of these restrictions. In Canada, hopes rose a few years ago that a common national standard might be secured, but one of the provinces stood in the way, but we are still hopeful that the idealists will prevail. We hope yet for a common Canadian standard. It is the right thing, and right

must yet hold sway. We make as strong an appeal as lies within our power that this ideal of a common Canadian standard of medical qualifications may soon become a reality.

He refers wisely and well to the fusion of medical colleges, and also to the wisdom of the homœopaths coming in with the general profession. "It is too late in the day to prattle about such antique nonsense as is indicated in the pathies." Here, again, we should have unity.

PERSONAL AND NEWS ITEMS.

Dr. A. C. and Mrs. Caldwell, of Hamilton, have gone on a trip to the old country.

Dr. J. E. James, of Edmonton, Alberta, has leased the office of the late Dr. T. G. Johnston, Sarnia.

Dr. L. E. Mylks, late assistant surgeon at the Winnipeg General Hospital, has decided to locate in Moose Jaw.

Dr. J. J. Matheson returned to Toronto from Edinburgh after a year's absence spent in post-graduate work in Edinburgh and Dublin.

Dr. Herbert P. H. Galloway has removed with his family to Winnipeg.

Dr. W. D. Newell, of Sarnia, has been appointed jail surgeon by the County Council in succession to the late Dr. T. G. Johnston, M.P.

The marriage of Dr. William L. Carnochan, Bay of Islands, Newfoundland, to Miss Winifred Mooney, of Vancouver, B.C., took place at Sydney, C.B., July 28.

The marriage of Miss Edna Roy and Dr. Neil Colville, Orono, was celebrated at the residence of the bride's parents, Mr. and Mrs. W. J. Roy, Darlington, on Wednesday, August 2nd.

The eldest daughter of Hon. and Mrs. F. Oliver was united in marriage at Edmonton, 14th August, to Dr. Hislop. They will reside in Edmonton.

Dr. F. A. Young, who has been spending three months in New York, has returned to Winnipeg and will resume his practice at 58 Nena street.

James Hyslop has begun an action against Dr. E. Fraser Bowie, of Toronto, claiming damages for injury by negligence, stating that he was treated for rheumatism instead of blood poisoning.

A very pretty and effective wedding was solemnized at the home of Mr. and Mrs. Adam Robertson, Durham, on Thursday the 20th August, when their eldest daughter, Ella, was united in marriage with Dr. Arthur Burnet, of Hamilton.

We regret to learn that Dr. G. D Turnbull has been obliged, owing to ill-health, to relinquish his practice in Yarmouth. He has gone to Digby, where he will remain for some weeks before going west. His family will remain in Yarmouth for some time.

In the presence of only the immediate relatives on Thursday, July 20th, at noon, Helen Maude, second daughter of Mr. J. R. Waugh, Brantford, was united in marriage to Dr. R. A. Burns, of Brussels. The ceremony took place at the residence of the bride's father.

Dr. L. T. Ainley has left Winnipeg for Wadena, Sask., where he is taking up a practice. The doctor received a hearty send-off from his numerous friends in Winnipeg, who wished him good-luck and prosperity in his new field of medical work.

OBITUARY.

A. STARK, M.D.

After an illness of several months, Dr. A. Stark, of Berwick, died on 21st July, aged 64 years. The deceased gentleman was born in Scotland and came to this country when a boy, settling on the homestead on which he died. After his graduation as a physician he took up practice in French, and was recognized as an able and careful doctor who never spared himself in his professional duties. He took an active interest in public affairs, and was reeve and county councillor for several years. He was recognized as an able man of strong character and his genuine good nature and hearty manner made him very many friends. Dr. Stark was twice married, his second wife surviving him. By his first wife he had five sons, all of whom are at home except one who is in the employ of the C.P.R. of Montreal.

JULIUS HAMEL, M.D.

Dr. Julius Hamel, who had been a resident of Magog for the past year, and who came from England, died suddenly on 10th August, of heart failure. He had not been in good health for some weeks, but it was not thought that his condition was so serious. He had been practising his profession at Eastman for some months previous to his illness. He was buried at the Pine Hill Cemetery on Sunday afternoon. Deceased was well liked by those who knew him and his untimely death is regretted. He had no relatives in this country and at one time had a lucrative practice in England.

R. H. CAREY, M.D.

A despatch received in Halifax, 23rd July, announced the death at Trepassey, Nfld., of Dr. Robert H. Carey, son of the late William Carey, of Halifax. The deceased died very suddenly. He was stricken with apoplexy and soon after the attack he passed away. Doctor Carey had many friends in Halifax, who will regret to learn of his death. He left Halifax about 23 years ago, and has since resided at Trepassey, where he enjoyed a very lucrative practice, and was held in the highest esteem.

 BOOK REVIEWS.

INTERNATIONAL CLINICS.

A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynæcology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and other topics of interest to students and practitioners. Edited by A. O. F. Kelly, A.M., M.D., Philadelphia. Vol. II. Fifteenth series, 1905. Philadelphia and London: J. B. Lippincott Company. Price \$2.25. Canadian agent, Mr. Roberts, Montreal.

This volume is just as good as effort could make it. There are articles in it on medicine, surgery, treatment, gynæcology ophthalmology, rhinology, physiology and pathology. There are fourteen plates and a number of figures. The articles cover a wide range of topics and are all well worthy of careful study. We can recommend this series to our readers, with every confidence that they will not be disappointed.

 UNITED STATES PHARMACOPŒIA.

The Pharmacopœia of the United States of America. Eighth Decennial Revision, by Authority of the United States Pharmacopœial Convention, held at Washington, A.D., 1900; Revised by the Committee of Revision and Published by the Board of Trustees. Official from September 1st, 1905. Philadelphia: Agents, P. Blackston's Son & Company. Sub-Agents: New York, E. R. Pelton; Chicago, The E. H. Colgrove Company; St. Louis, C. V. Mosby; San Francisco, Payot, Upham & Company.

The very first word that should be said in reviewing the present edition of the United States Pharmacopœia is one of high praise for the thorough manner in which the revision has been carried out. The names on the Committee of Revision were a guarantee in advance that such would be the case. The work has been brought up to date in every possible respect. Modern spelling has been introduced, and the newer and more accurate method of naming certain drugs, such as phenol for carbolic acid. The specific gravities are given at 25c. and the equivalent 77F is in brackets. The centigrade temperature is used

throughout, but the Fahrenheit is also stated. Doses are expressed in the metric system and the approximate ordinary weight or measure in parenthesis.

The strength of tincture of aconite has been reduced from 35 per cent. to 10 per cent., and that of tincture of veratrum from 40 per cent. to 10 per cent. The strength of tincture of strophanthus has been increased from 5 per cent. to 10 per cent.

These changes have been made in order to conform to the standard adopted by the International Conference on Potent Remedies held at Brussels, in September, 1902, the object being to make uniform the strength of potent remedies in all parts of the world.

We can speak in the highest terms of this work. It should be in the hands of every one who has any dispensing to do.

HANDBOOK OF ANATOMY.

Being a Complete Compend of Anatomy, including the Anatomy of the Viscera and numerous tables, by James K. Young, M.D., Professor of Orthopædic Surgery, Philadelphia Polyclinic; Clinical Professor of Orthopædic Surgery, Women's Medical College of Pennsylvania; Instructor in Orthopædic Surgery, University of Pennsylvania; Fellow of the College of Physicians of Philadelphia; Fellow of the Philadelphia Academy of Surgery; Fellow of the American Orthopædic Association; Member of the American Medical Association, etc. Second edition, revised and enlarged. With 171 engravings, some in colors. Crown octavo, 404 pages, extra flexible cloth, rounded corners. \$1.50 net. F. A. Davis Company, publishers, 1914-16 Cherry Street, Philadelphia.

This is an excellent book for its size. The descriptions of the various structures are very carefully and explicitly stated. It is no easy task to describe an organ or anatomical structure in a brief manner, and retain clearness of style and expression, This book does this in a very praiseworthy way. The illustrations are good. There are a number of excellent charts scattered throughout the book. This work will be found useful for the general practitioner, who has to look up points constantly, and also to the student who wishes to acquire a thorough knowledge of the subject.

THE NATIONAL STANDARD DISPENSATORY.

By Hare, Caspari and Rusby. Lea Brothers & Co., Philadelphia.

This work will be ready for sale September 1st, the date when the new U. S. Pharmacopœia goes into effect. By authority of the convention it will contain every article in the new U. S. P., as well as the explanations and instructions necessary to understand and apply the brief statements to which the official guide is restricted.

"THE NATIONAL STANDARD DISPENSATORY" is a new work, a distinct improvement upon anything of the kind hitherto published. Its authors, Dr. H. A. Hare, of Philadelphia; Prof. Charles Caspari, Jr., of Baltimore; and Prof. H. H. Rusby, of New York, are all men of the highest eminence in their respective fields, and are all members of the Revision Committee of the U. S. P. They have carefully matured its plan so as to render the maximum service to both professions it interests, namely, pharmacy and medicine. It not only covers the new U. S. P. as aforesaid (and the chief foreign pharmacopœias as well), but the scarcely less important domain of the unofficial drugs and preparations so largely used. It offers full information regarding the pharmacognosy, the pharmacy, and the medical action and uses of all substances used in pharmacy and medicine at the present day. Pharmaceutical methods and products are covered, with descriptions of the most approved apparatus and tests.

Dr. Hare has again justified his reputation for knowing what is wanted by giving a compact and direct presentation of modern therapeutics in the section dealing with that subject in the case of each drug. The appendix contains useful tables, formulas, etc., for practical work. There are two indexes, the general, covering all the names in the text, and so affording a guide to the drugs of the entire globe, and the therapeutic index, where, under each disease, are given all the drugs used in its treatment, with reference to the page where the conditions indicating a choice are found.

This work of the maximum utility is alone in the field.

TAYLOR ON SEXUAL DISORDERS.

A Practical Treatise on Sexual Disorders in the Male and Female. By Robert W. Taylor, A.M., M.D., Clinical Professor of Genito-Urinary and Venereal Diseases in the College of Physicians and Surgeons (Columbia University), New York. New (3d.) edition, enlarged and thoroughly revised. In one octavo volume of 575 pages, with 130 engravings and 16 colored plates. Cloth, \$3.00 net. Lea Brothers & Co., Philadelphia and New York, 1905.

The demand for three large editions of Dr. Taylor's excellent work in less than five years indicates the position of authority in its field which it has won. The volume covers the sexual disorders of both sexes fully in all their bearings. In this edition the chapter on the anatomy and physiology of the sexual apparatus has been very much amplified and many new illustrations have been added. Throughout the work diseases of this nature have been treated in careful detail, many typical cases being given, thus facilitating diagnosis and rendering most practical aid in questions of treatment both medical and surgical.

The text has been thoroughly revised to date, and the sections which treat of the sexual disorders in women have been greatly enlarged. Four completely new chapters have been added and a number of new illustrations, mostly original, will, it is believed, render this valuable work still more useful to the specialist and general practitioner. Dr. Taylor's work is practically the only one in English in its exact field, and its great practical worth is clearly reflected in the demand which affords such frequent opportunities for revision.

DIETETICS FOR NURSES.

By Julius Friedenwald, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and John Ruhrah, M.D., Clinical Professor of Diseases of Children, in the College of Physicians and Surgeons, Baltimore. 12mo. volume of 363 pages. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$1.50 net. Canadian agents, J. A. Carveth & Co., Limited, 434 Yonge St., Toronto.

"Dietetics for Nurses" has been written on the same practical lines as the larger work on Diet by the same authors. It has been prepared both to meet the needs of the training school and to serve as a ready reference book for the nurse when on a case. The essentials of dietetics are given in a concise, clear manner, and the physiology of digestion with the various classes of foods and the part they play in nutrition have been carefully reviewed. The subjects of infant feeding and the feeding of the sick have been fully discussed, and a brief outline has been given of the principles involved in the nourishment of patients suffering from the various diseases in which diet plays an important role in treatment. A very useful feature consists in the extensive diet lists, with instructions, enabling the nurse to comprehend and intelligently to carry out the orders of the physician. Another commendable feature is the large number of recipes for the invalid's dietary. Altogether, it is an excellent little work indispensable to the well-trained nurse.

AMERICAN EDITION OF NOTHNAGEL'S PRACTICE.

Diseases of the Kidney, Diseases of the Spleen, and Hemorrhagic Diseases. By Drs. H. Senator and M. Litten, of Berlin. Edited, with additions, by James B. Herrick, M.D., Professor of Medicine in Rush Medical College, Chicago. Octavo of 816 pages, illustrated. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$5.00 net; Half Morocco, \$6.00 net. Canadian agents, J. A. Carveth & Co., Limited, 434 Yonge St., Toronto.

With the appearance of this, the eleventh volume of Saunders' American edition of Nothnagel's Practice, the work nears completion,

the final volume on the Heart being now in active preparation. Like the others, this volume can be taken as the acme of knowledge on the subjects embraced. Professor Senator's clear style, systematic arrangement of facts, and logical reasoning make his articles on the Kidney indispensable to the practitioner. The editor, Dr. Herrick, has enlarged on certain points whenever necessary, especially regarding treatment, diagnosis, urinary analysis, etc., so as to increase the value of the work to the general practitioner. He has also added articles on Cryoscopy and Phloridzin Glycosuria.

The sections on the Spleen and the Hemorrhagic Diseases were written by Professor Litten, whose pioneer work in these fields is widely known. The articles on the Mosquito and its relation to Malaria, on Splenic Anemia, on Congenital Icterus with Splenomegaly, and on the X-rays in the treatment of Leukemia have been brought down to date by the editor. Indeed, the editor's interpolations add greatly to the practical value of the volume, and we are sure such an authoritative work on these subjects has never before been published.

HUMAN PHYSIOLOGY.

Prepared with special reference to Students of Medicine. By Joseph H. Raymond, A.M., M.D., Professor of Physiology and Hygiene, Long Island College Hospital, New York City. Third edition, thoroughly revised. Octavo volume of 687 pages, containing 444 illustrations, some in colors, and four full-page lithographic plates. Philadelphia and London: W. B. Saunders & Co., 1905. Cloth \$3.50 net. Canadian agents, J. A. Carveth & Co., Limited, 43½ Yonge Street, Toronto.

It is evident that in revising his excellent work for the new third edition, Dr. Raymond spared no labor to bring it up to present-day knowledge. Every page shows evidence of his careful revision, and in that portion devoted to the physiology of nutrition the author has profitably availed himself of Chittenden's valuable contributions to the subject. Besides more fully elaborating many topics previously discussed in the old edition, the author has introduced a number of new subjects, among which are the Influences of Alcoholic Fluids on the Excretion of Uric Acid, Hemolysis and Bacteriolysis, and Ovarian and Abdominal Pregnancy. Dr. Raymond seems in some way to know just what features to illustrate and just what kind of illustrations to use, for every one of the 444 figures is practical and illustrates a point which might not be clear to the student. It would be difficult to find another volume of the same size containing so much up to date and accurate information.

THE TREATMENT OF FRACTURES.

The Treatment of Fractures; with Notes on a Few Common Dislocations. By Charles L. Scudder, M.D., Surgeon to the Massachusetts General Hospital. Fifth edition, revised and enlarged. Octavo, of 563 pages, with 739 original illustrations. Philadelphia and London: W. B. Saunders & Co., 1905. Flished buckram, \$5.00 net; half morocco, \$6.00 net. Canadian agents, J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto.

Every year for the past five years it has been our pleasure and profit to review a new edition of this excellent work by Dr. Scudder. It is, indeed, a most remarkable book, and the author and publishers are to be congratulated upon its publication. In this, the fifth edition, Dr. Scudder has added some fifty new illustrations, many of them X-ray plates, illustrating the actual line of fracture. The text also has been very carefully revised, and new matter added throughout. Important changes have been made in the treatment of fractures of the neck of the femur, bringing this part of the book in accord with the latest advances. The 739 illustrations do what they should—they *illustrate* showing the reader just what is intended. Undoubtedly this feature has aided greatly in the success of Dr. Scudder's work.

JACKSON ON THE SKIN.

A Ready Reference Hand-book on Diseases of the Skin. By George Thomas Jackson, M.D., Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons (Columbia University), New York. Fifth edition, enlarged and thoroughly revised. In one 12mo volume of 676 pages, with 91 engravings and 3 colored plates. Cloth, \$2.75 net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1905.

The great value of this volume lies in the clearness of its symptomatology and diagnosis, and the excellent judgment used in its therapeutic recommendatons.

The clear diction and the very convenient alphabetical arrangement renders the work not only an exceedingly quick reference book for the busy physician, but adapts it especially to the needs of students. The demand for five large editions is ample evidence of the popularity of the book. Each edition presents a thorough revision of the subject, so that the work may always be consulted for the condition of the science of Dermatology as it really exists. The present revision has been particularly searching, and the subject matter has been brought well up to date. The Appendix, containing formulæ for Baths, Lotions, Ointments, Powders, etc., and prescriptions for internal treatment, is alone worth the price of the book.

As heretofore, symptomatology, diagnosis and treatment are specially considered. Many new sections have been added, resulting in a considerable enlargement of the work, and the volume is issued in full confidence that it will prove even more than ever before valuable to practitioners, students and teachers.

MISCELLANEOUS.

RELIEF IN NEURALGIA AND GIRDLE PAINS.

The efficiency of antikamnia tablets in neuralgia is beyond dispute and is well illustrated by the following case: An old nurse who had suffered from severe neuralgia at intervals for many years and whose hair had become gray on one side of her head from this cause, expressed herself as having gained more relief from antikamnia tablets than from all of the many medicines which had been prescribed for her. For pain about the head from almost any cause, antikamnia tablets always have undoubted preference over all other coal-tar preparations. They are a useful adjuvant in the treatment of migraine, and the headaches of school children promptly yield to moderate doses.

In cases of organic spinal disease they proved of considerable value. A woman of 52, with transverse myelitis (complete paraplegia) found them reliable for controlling the very annoying girdle pain. Two or three doses of one tablet each, within twenty-four hours, were sufficient to make the pain endurable. In another case, where there was the girdle sensation connected with its earlier history, and numbness and paræsthesia of the lower extremities existed, one antikamnia tablet was given three times a day along with a regular potassium iodide treatment. The observation of this case has extended over 18 months and at no time has the progress been so satisfactory as during the last six weeks, in which she has taken antikamnia tablets regularly.

TONSILLITIS.

Inflammation in any form attacking the tonsillar region gives rise to symptoms of most distressing character and at the same time provides a most favorable soil for the entry into the system of other infections. It is well to remember that at first this disease is only a local disturbance affecting the capillary system and glandular structures and if promptly and efficiently treated will remain local. The constitutional symptoms, such as fever, headache, etc., only develop when there is considerable infection taken up.

In treatment, the first indication is to increase local capillary circulation. A local remedy must fill two requirements, i.e., a detergent antiseptic and a degree of permanency in effect. Many of the remedies which have been advocated for the various forms of tonsillitis are antiseptic but they are not sufficiently exosmotic in their action to increase the circulation or else their effect is too transient. Glyco-Thymoline,

frequently applied in a 50 per cent. strength with a hand atomizer, produces a rapid depletion of the congested area through its well defined exosmotic property, re-establishing normal passage of fluids through the tissues, promptly relieving the dry condition of the membrane and giving an immediate and lasting anodyne effect. As a gargle a 25 per cent. solution hot may be effectively used, providing the process does not cause undue pain. The external application of cloths dipped in hot water and Glyco-Thymoline in 25 per cent. solution greatly increases the venous circulation.

SIGNIFICANT FIGURES.

Fifteen million, five hundred and two pounds of tobacco, cigars and cigarettes, were used in Canada during the year covered by the last fiscal report, and an analysis of the returns shows that the use of cigarettes is largely on the increase.

The cigarette is an inexpensive and convenient form of smoke, and used rationally it is the best way in which to enjoy the solace of tobacco. Of the increase noted above, much is traceable to the popularity of the "Sweet Caporal" cigarette and it is not surprising that it should grow in favor, inasmuch as competent analysis have attested to its purity.

AN OPEN LETTER RE PLATT'S CHLORIDES.

So many enquiries are received as to the relative expense of Platt's Chlorides, as compared with other disinfecting and de-odorizing solutions, that it seems expedient to publish a letter such as is usually sent in response.

"Replying to yours of the _____ will say, that Platt's Chlorides, diluted for use as a local application with thirty-two (32) parts of water (one tablespoonful to a pint) costs less than 1½ cents a quart; diluted for general sick-room and household use with ten (10) parts of water it costs less than 5 cents a quart; for disinfecting and de-odorizing dejecta and excreta in contagious and infectious diseases, diluted with four (4) parts of water, it costs less than ten (10) cents a quart.

For all of these uses, it costs less than carbolic acid which is probably more frequently used than any other antiseptic.

The formula and solution have been submitted to the Council of Pharmacy, A. M. A.

Any further data regarding the chemistry or uses of Platt's Chlorides will be promptly given on request, by,

Yours most truly,

HENRY B. PLATT.

THE CORRECTION OF ABNORMAL CONDITIONS OF THE BLOOD RELATIVE TO SURGICAL OPERATIONS.

By S. C. EMLEY, A. B., M. D., of Wichita, Kan., Late Pathologist, Augustana Hospital, Chicago, Ill.

Frequently the surgeon is called upon to operate on patients who, when they first present themselves, are in no condition to stand an operation on account of deficient quantity of blood or the poorness of its quality. On the other hand, it is desirable that the patient regain his normal condition as soon as possible after operation, whether the abnormal condition of blood is due to the operation or not.

The ideal remedy is that which will restore the normal condition of the blood in the shortest time with the least disturbance to the rest of the body, the digestive system particularly. Less necessary are palatability and cost of the remedy. To determine which of several preparations best fulfilled the above conditions was the purpose of this investigation.

All of the preparations used being recognized as good, Dr. A. J. Ochsner gave me permission to prescribe them as I saw fit to certain of his patients in Augustana Hospital. Only those cases were selected whose appearance indicated the need of a hematinic. As often as possible similar cases were paired off, one patient being given one preparation and the other patient another, and the results compared. The cases were paired according to pathological condition, age, sex, general condition and the condition of the blood as to hemoglobin and erythrocytes at the beginning of treatment. The preparations used were malt with iron and manganese; malt with iron, quinine and strychnine; Blaud's pills, and the preparation known as pepto-mangan (Gude).

After watching the effect of the medication on the patients, and observing the records, it is seen that Blaud's pills acted quickly, but constipated; the malt combinations caused nausea in a few patients, and the malt, manganese and iron combination caused constipation in nearly all. The pepto-mangan, given in milk, was agreeable to take, and in no case did it cause nausea or constipation. While in two cases the Blaud's pills acted more quickly than pepto-mangan in two similar cases, on the whole the latter gave better and quicker results than any of the others, and at the same time caused no digestive disturbances in any of the cases.

Although the investigation was undertaken for the purpose of finding the best hematinic for surgical cases, it was tried in one case of chlorosis and in several obscure medical cases.

The following table shows the results obtained in all those cases where Gude's preparation was given. One to four drams were given in milk to each case, three times a day. The hemoglobin was estimated

Name.	Age.	Diagnosis.	Date.	Erythrocytes per 1 c. c.	Per cent. of Hemo- globin.
1. G. N. ¹	55	Carcinoma of stomach...	9-29-03	2,920,000	33
			10-12-03	3,400,000	43
			10-25-03	3,260,000	42
			11- 8-04	2,520,000	36
2. Mr. L. ¹	49	Carcinoma of stomach...	10-29-03	2,665,000	27
			11-23-03	2,900,000	28
			12- 5-03	2,540,000	27
			12-19-03	2,300,000	26
3. Miss J.....	17	Acute menorrhagia.....	12- 4-03	2,310,000	36
			12-20-03	3,565,000	44
			12-27-03	4,160,000	49
4. Mrs. E. K....	33	Menorrhagia.....	12- 7-03	4,340,000	44
			1-10-04	3,565,000	64
			1-18-04	5,100,000	82
5. Mr. S.....	23	Neurasthenia (?)	12-16-03	4,060,000	60
			1- 7-04	4,260,000	65
			1-14-04	4,560,000	75
6. Mr. K.....	35	Tuberculosis of mesen- teric glands.	11-15-03	3,825,000	62
			12-10-03	4,826,000	68
			1- 4-04	4,716,000	66
7. Mrs. F.....	23	Pelvic abscess.....	10-25-03	4,060,000	60
			11-23-03	5,100,000	69
			12-11-03	4,975,000	78
8. Mrs. A.....	34	Pelvic abscess.....	12-10-03	3,195,000	53
			12-29-03	4,293,000	58
			1-11-04	4,560,000	78
9. Miss A. J....	16	Chlorosis	10-25-03	3,010,000	45
			11-12-03	4,950,000	65
			11-25-03	5,676,000	80
10. Mrs. H.	40	Myoma of uterus.....	7-15-03	2,100,000	42
			8-17-03	3,900,000	55
			9-15-03	4,500,000	80
11. Johnny L....	13	Tuberculosis of hip.....	12- 1-03	2,680,000	45
			12-29-03	3,600,000	55
			1-20-04	4,100,000	62
12. Mr. E. P....	21	Tuberculosis of ankle.	10-29-03	4,310,000	66
			11-10-03	4,850,000	71
			1-23-04	5,166,000	75
13. Johnny F....	9	Extensive burn and in- fection of surface.	11- 9-03	3,560,000	50
			11-25-03	3,900,000	56
			1-23-04	4,362,000	68
14. Miss E. B....	17	Perforative appendicitis.	11-25-03	3,600,000	55
			12-26-03	4,000,000	65
			1-22-04	4,250,000	69
15. N. N.....	29	Suppurative appendicitis.	12-20-03	4,200,000	60
			1- 2-04	4,400,000	66
			1-20-04	5,120,000	75
16. Mr. B.....	28	Chronic appendicitis....	1- 2-04	3,565,000	62
			1-10-04	4,320,000	70
			1-23-04	4,800,000	78
17. Mr. S.....	37	Gangrenous appendicitis.	10-10-03	3,300,000	45
			10-27-03	3,350,000	45
			10-27-03	3,010,000	40
18. Miss W. J..	29	Empyema	11-20-03	2,740,000	44
			12-20-03	3,070,000	52
			1-22-04	3,820,000	60
19. Mr. F.....	44	Cholelithiasis Chronic appendicitis.	11-23-03	3,560,000	57
			12- 4-03	4,100,000	68
			1-12-04	4,640,000	78

¹ Incurable.

with Von Fleischel's hemometer, and the erythrocyte count made with the Thoma-Zeiss apparatus. The first blood count was made previous to operation in all surgical cases, and the last a short time before the patient's discharge from the hospital. The second count was never made immediately after the operation because of the temporary derangement due to the anesthetic and the loss of blood.

In the nineteen cases tabulated there is an average increase of 800,000 erythrocytes and of 14.5 per cent. hemoglobin. This improvement was during forty days on an average. The usual time a patient stays in the hospital is twenty-one days when the case is of ordinary severity from a surgical standpoint. Such cases were placed on tonic treatment and showed rapid improvement, but of such cases only one (Case 16) is noted because it might be urged they would improve equally fast with or without a tonic.

It is seen from the above table that even in the cachexia of carcinoma there is a temporary improvement, which shows that in the use of this tonic we are dealing with a powerful hematinic. In Case 17 there was no improvement, the patient dying shortly after the last count. At the autopsy I found a pyogenic abscess in the liver as large as an orange and about 200 c.c. of pus below the right kidney, which explained the retrogression. In all of the other operated cases the improvement was steady and marked, especially in uterine diseases accompanied by loss of blood. In the case of chlorosis (Number 9) the improvement was remarkable, the patient being discharged cured in a little over a month, at which time all the symptoms had disappeared.—*Reprinted from Medical News, September 24, 1904.*

SOME NEGLECTED SYMPTOMS OF NON-SURGICAL GYNECOLOGY.

By JOHN A. HALE, M.D., Alto Pass, Ill.

It is but a lack of inquisitiveness on the part of the general practitioner that has brought about a condition of things in gynecological practice that warrants the assertion so often reiterated in current surgical literature that "Modern gynecology belongs, pactly, to the field of operative surgery."

The successful physician, with a characteristic personality of inquisitiveness, can boldly refute such assertions and substantiate his refutation by the thankfulness of a happy clientele of woman-kind released from a thralldom of suffering by his inquisitiveness.

Diseases of the female organs of generation are more common than any but a physician can suppose, and surgical gynecology has become a necessity from an early neglect of backaches, spineaches, and headaches, followed by irregular, scanty, painful, delayed or suppressed menstruation during girlhood. The inquisitive physician rushes not into instrumental interference, nor sends such patients to certain specialists for officious mutilation, but first a volley of seek-farther questions at the patient which elicit the information that such patient passed her days of approaching puberty in an over-crowded public school, or, worse, in a jail-like boarding school for young ladies, adding fuel to the fire of antagonism between brain and digestible foods, the body growth lags behind, leaving the imprint of the unequal struggle on the reproductive organs.

With poorly established sexual functions and a perfect disregard for menstrual week, the undeveloped woman leaves school to plunge into a vortex of social dissipation, followed later by an assumption of wifely duties and responsibilities toward a husband who has seen only her bewitching face and not her frail body.

It is hard to fathom the reason why so many such wives at first tolerate marriage obligations and later resent and loath them when the poor, broken-down sexual system refuses longer to continue functions for which it was made, but carelessly unfitted?

Is not such a condition a cause for dread of maternity on the part of the woman which often leads to criminal abortion, with all its attendant sequences?

To the inquisitiveness of the successful physician must be added a power of positiveness, wherein he may teach both the husband and the wife something they should know before their carelessness brings about these later conditions which require the necessity of mutilation.

The woman suffering from continued nervousness, weariness, wakefulness, headache and backache needs the services of a physician, and not a surgeon. Likewise such symptoms as scanty, painful, delayed and suppressed menstruation should be under the care of a physician :nd not an over-zealous surgeon. Prolapsus, leucorrhœa, ulcerations, chronic inflammations, congestions and enlargements are purely the outcome of neglect of just such symptoms as named. The first-named symptoms are but the assertions of Nature that she is tired of the unequal load, and if not relieved she will resist no longer, come what will.

A judicious investigation of seemingly insignificant details and close application to the technique of examination in the early stages of such cases will reveal constipation, congested mucus lining of the vagina, and irritable bladder, with diffuse hyperaemia of all pelvic structures

and loss of organic or respiratory rhythm ; that subtle thrill which extends over the whole body synchronous with the beating of the heart and motion of the lungs, plainly perceptible to the trained eye looking upon healthy pelvic viscera. Quick must be the relief of this engorgement, with its pernicious nutrition of the parts and concomitant accumulation of excrementitious matter.

First and foremost in the treatment of this condition comes the remedy of absolute rest to the parts, and then, but no less important, is the removal of improper dress and the re-establishment of abdominal breathing to restore proper circulation in the pelvic viscera. Treatment for the removal of constipation is self-suggestive; rest we can enjoin upon our patient, and abdominal breathing we may advise, but all animal cells, whether single or united in tissues or in organs, consume a certain amount of matter, and those chemical changes by which material brought to the tissues and organs by the blood and transformed into other products through the activity of the living cells which liberation of life energy, must be maintained by a continued inherent thrill or respiratory rhythm and a constant supply of chemical products. This same chemical agent must not induct a destructive blood metamorphosis, but supply food for the debilitated vitality. For such action we must seek some combination of the old and well-tried remedies of ergot and apium, with acceptable haemagogues.

The questionable action heretofore exhibited by various preparations of such remedies has been due, as clinically proven, to the component resinous compounds of the apium in the combination. In Ergoapiol (Smith) the active principles of apium have been isolated and with ergot made to form an acceptable and agreeable compound with invigorating haemagogues, proving of unquestionable benefit in such conditions as mentioned in this article.

When the general practitioner awakens to his responsibility, we will have less of these conditions, a continuation of which invariably produces a capillary varicosis, with its train of evils, manifested more frequently by copious and disagreeable discharges called leucorrhœa. But even as late as in this last-named condition the physician will learn that Ergoapiol (Smith) judiciously, consistently and determinedly administered, will prevent much needless mutilation by effecting a cure.

Pre-emption of space for case reports on this subject would scarcely be justifiable, when each reader may cluster the facts as herein stated around well-known principles and evolve therefrom a rational solution of treatment for diseases involving the female genitalia.—*From the Medical Herald of St. Joseph, Mo.*

SUN-PAIN AND OTHER PAIN.

In the pain and pyrexia produced by exposure to the rays of the sun, which is common in this country, and particularly in our large cities, during the summer solstice, antikamnia tablets, in addition to cold douches, are the best remedy. Antikamnia tablets reduce temperature by increasing radiation of heat from the body, and diminishing heat production. They stimulate the glandular system, particularly the sudorific glands: In many cases their diaphoretic action is phenomenal. They act as an analgesic by obtunding the sensibilities of the vaso-motor sensory nerves. They seem to tranquilize the ganglionic centers of the whole nervous system and have but slight action on the brain. We mean by this, that they do not stupefy nor produce unconsciousness. They seem to have no disturbing influence on the kidneys. They have a happy effect in nearly all neurotic troubles and occupy a permanent position in therapeutics. Briefly stated, they are indicated in sun-pain, cephalgia, neuralgia, attacks of acute rheumatism, sciatica, dysmenorrhoea, irregularities and all painful conditions.

In the treatment of conditions where it is important to exhibit quinine, the action of Antikamnia & Quinine Tablets will be found specially desirable. The antikamnia not only relieves the pain, but prevents any disturbance of the nervous system, so frequent when quinine is given alone.

 PAPINE.

N. B. Shade, M.D., late editor *North American Medical Review*, Washington, D.C., says in the *Medical Examiner and Practitioner* :

Papine is derived from the concrete juice of the unripe capsules of *Papaver somniferum*, U. S. Pharmacopoeia. Physicians who have tested the virtue of papine in their practice have given evidence that it contains all the medicinal value of opium, with all its bad qualities eliminated. Papine has none of the bad after effects of opium, morphia, laudanum, paregoric, etc. I positively declare and insist that the physician who once gives papine a trial cannot be persuaded to deprive his patients of the great benefit of this agency to relieve pain, an implement of precision, which is perfectly harmless to the patient.

 SANMETTO IN PROSTATITIS, CYSTITIS, GONORRHEA AND URINARY IRRITATIONS.

I have been an extensive prescriber of Sanmetto in cases of prostatitis, cystitis, gonorrhoea and general urinary irritations, and look upon it as one of the surest remedies in that class of troubles I have ever seen. I shall continue to use where indicated.

Dayton, Ohio.

A. R. MOIST, M.D.

THE PSYCHOTHERAPEUTICS OF NEURASTHENIA.

By JEANNE CADY SOLIS, M.D., Ann Arbor, Michigan.

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NEURASTHENIA, nervous exhaustion, or nervous prostration, as variously designated, is but too common a condition at the present time. True neurasthenia is always acquired, but in addition, we may have a hereditary and a symptomatic form. It is the true neurasthenia alone which we will consider here.

Neurasthenia occurs at all ages, some cases being found among children and others in old age, but the greatest number of cases develop in early adult life, from twenty-one to thirty-five years of age, when the strain and stress of life are greatest.

In the majority of cases there is a history of overwork—physical or mental—combined with worry and anxiety. In all cases there is probably this factor of overwork, though it may not appear in the history, as the individual's particular limit of endurance may be so low that only the average, or usual amount of work is too much for him. In addition we find emotional shocks, grief, excesses of all kinds, exposures and injuries have an influence in the development of neurasthenia.

The neurasthenic state may be produced by the introduction from without of substances toxic to the nerve centers, and may similarly arise from the entrance into the circulation of substances toxic to the nerve centers generated within the body. Thus we find neurasthenia associated with uric acid in the blood and with toxins from the gastrointestinal tract. A condition of anemia produces neurasthenia.

Pathologically neurasthenia is an exaggerated, an abnormal fatigue of the nerve cells. The studies of Hodge, Mann and others have shown that nerve cell fatigue is attended by a more or less degree of chromatolysis, in which condition their function is depressed or abolished. Under normal conditions these fatigued cells, after a certain period, some hours or so, of rest, resume their usual appearance and the arrangement of their constituents is such that normal function is again possible. If, on the other hand, these fatigued nerve cells are compelled to continue functioning without proper intervals of rest, we have a more intensified condition of chromatolysis and neurasthenia results. If emotional strain, either alone or joined with overwork, is brought to bear with sufficient intensity and duration on brain cells, the same uncompensated exhaustion manifests itself in the internal structure and appears outwardly in our especial case as neurasthenia. Toxic or autotoxic substances may produce this chromatolysis, either acute or chronic, and again we may have neurasthenia manifested.

This impairment of the nerve centers secondarily involves impairment of the whole organism. There is a lowering of all the vital forces. The sympathetic system becomes irritable as manifested by the symptoms dependent on its disturbance. A vicious circle is set up. Primarily the fatigue of the central cells depresses the action of the organic sympathetic centers; then the metabolic processes being disturbed in this way, secondary irritations arise due to the imperfect assimilation and elimination of the products of metabolism, and continuously operate on already devitalized nerve centers. The higher or psychic centers are the ones primarily affected, making neurasthenia a psychic disorder.

With Gower we feel that "no description, however lengthy, would embrace half the varied manifestations of mere nervous weakness." The lengthy history, with its varied, variable and vague symptoms, constitutes a true characteristic of the disorder.

The first symptom is often a disturbance of sleep. As the highest centers are involved, and in them their highest capacity, we find as early symptoms, mental irritability and excitability, diminished directing power, or capacity for continuous thought, lessened ability to fix the attention, incapacity to perform either habitual tasks, or the complex relations of social life, great depression, inability to make decisions, difficulty in recalling memory images, self-concentration and morbid introspection preventing outer concentration, lessened spontaneous mentation, conditions of fear and apprehension, great physical fatigue, a conscious difficulty in mental and physical exertion, headache.

In addition there may be symptoms on the part of all the special senses though these are generally functional and usually of a painful character. General sensibility is not greatly disturbed. There may be pains dependent on a neuritis, or paresthesias which may be purely subjective or also dependent on a neuritis.

The motor symptoms are weakness, tremor, exaggeration or depression of the deep reflexes. The digestive, circulatory, respiratory and genito-urinary systems may all add symptoms to this picture; as well as the various secretory glands. The disturbance of the vasomotor system gives characteristic symptoms. There may be painful flushings, blushing, dermographia, or edemas. This instability of the vasomotor system is in great measure the cause of the extreme variability of the symptoms and inconstancy of the same. A certain set of nerve cells at one moment may receive an increased blood supply through vasomotor dilatation at the expense of neighboring cells, so there is no harmony of action; and, this dilatation being soon followed by constriction, the cells are again rendered inactive. This inconstant blood

supply keeps the cells irritable from insufficient or unbalanced nutrition, and the symptoms peripherally are in accordance with the central changes.

Neurasthenia may be confounded with the early stage of some forms of mental disease, as with general paresis, for instance; but in neurasthenia though there is difficulty in the mental processes, there is no absolute failure, the patient retains the reasoning power, can perform acts and adjust himself to his surroundings. In neurasthenia, without demonstrable pathological change in the nervous system, we have a condition of simple pathological depression in which, as Bevan Lewis states it, "there is a failure in object consciousness which invariably inaugurates a corresponding rise in subject consciousness and which we have reason to infer implies a diminished functional activity in those realms of the cerebrum correlated thereto."

There is nothing more debilitating mentally and physically than self-pity, and we find this attitude of mind accentuated in neurasthenia. With all the thoughts and interests of the patient centered within, it is difficult, if not impossible, to bring about a natural, healthful condition of the body generally. This mental depression and preoccupation correspondingly depress all the organic functions. You cannot have a good circulation when the mind is occupied with a fear of insanity, or apprehends an approaching disorder of unknown character. Nor will the gastric secretions be normally produced nor act normally under such conditions.

For the time being the patient's mind must be taken possession of, and dominated. The inability to make decisions must be met by the physician, the thoughts and feelings, as well as actions of the patient, must be controlled and directed by healthful suggestions. These suggestions must be varied to meet the different conditions. As the degree of fatigue will vary, so will the symptoms, and the necessity for outside influence, to put the mental functions in motion. The mental inertia must be overcome but always judiciously, the underlying pathology of fatigue—exhaustion—being kept in mind.

First, then, must be won the confidence of the patient and a careful examination generally accomplishes this. Having this confidence and being able to assure the patient the condition is not a serious one, time, with proper treatment, will give a successful issue to the case.

In extreme cases the pure rest treatment, according to Mitchell, or to Playfair, must be employed for a time. Then gradually the time in bed is reduced, voluntary exercise is prescribed and some mental diversion added according to the nature of the case.

In a great number of cases it is not necessary, neither is it best, to interdict all work, either mental or physical, but the patient may be

allowed to carry on a part of the usual occupation, as, for instance, a student carrying a certain number of hours a week may be allowed a limited number of hours of such work that least disturbs him.

Every day comes the same tale of woe, the same wails, the same lack of faith in the desired outcome of the case, yet after some weeks it will not be quite so hard to interest the patient in other things, the depression will be relieved for a longer time, and finally the patient begins to believe for himself that life is a good thing, that he has a work and is able to do it. Then for a time the ambition must be curbed and the amount of work and alternate rest carefully regulated. The patient must be taught the physiology and hygiene of his higher nerve centers. He must be shown that nature will be revenged if she is abused, that fatigue must be followed by a proper period of rest, that with care the nervous system becomes a source of joy to its possessor rather than one of torment. If this teaching could be given earlier the cases of neurasthenia would be few.

Static electricity and hydrotherapy are of great value in the treatment of these cases. The static treatments should be given daily, or if the patient is in an institution, twice a day, for ten minutes, nine minutes being given up to the breeze, while a discharge of sparks from between the shoulders over the organic spinal centers finishes the treatment.

The patient should always be closely attended during treatment, as all of them are apprehensive and nervous, and it is during this treatment that the daily interview may take place.

Hydrotherapy, in the form of cool, salt sponges, the salt glow followed by alternating hot and cold pours in the mornings, and a warm bath at bedtime it least three times a week, is most efficient.

It is generally necessary to overfeed and this is done by increasing the number of meals rather than the quantity of food at each meal. It is a good plan to give between meals and at bedtime a glass of milk. This may be cold or hot, according to taste, and may be varied by substituting broth, cocoa, or an eggnogg, once in a while. If necessary stomachics and digestives may be added, and, as a rule, a sedative nerve tonic hastens the cure.

As to time, an average case takes about three months' time for recovery. The less medication employed the better. Nature will do a great deal in these conditions, if by general management of the physical symptoms and special attention to the psychic symptoms, we keep the patient in such a mental state that she has opportunity to act.— *The Physician and Surgeon.*