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ACUTE INFECTIVE OSTEOMYELITIS.*

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ACUTE infective osteomyelitis is an acute inflammation of the bone marrow, due to some pyogenic organism reaching the part, either through some wound in the vicinity, or through the blood stream. When it is due to the latter the organisms enter the blood from some preceding infected focus such as a boil, an inflamed tonsil, or a lesion in the respiratory or alimentary tract, etc., or from an infected wound.

The disease commences in a medullary tissue, frequently in the diaphysis of a long bone close to the epiphyseal cartilage, where growth is most active, the circulation slow, the bone weakest and most liable to injury. Thus it occurs most frequently in the lower end of the femur, the upper end of the tibia and of the humerus, and lower end of the radius, in children and young adults. It may occur, however, in the medullary tissue in any part of the bone, not only in the long, but also in the flat and irregular bones.

The infection usually follows some preceding disease or condition which lowers the vitality of the system, and especially that of the bone marrow, which normally possesses a vital resistance to bacterial invasion. Among the diseases which often play an important part in preparing the child for the attack may be mentioned scarlet fever, typhoid fever, measles, influenza, pneumonia, tonsillitis and bronchitis. In a large number of cases on careful enquiry a history of some *local injury* such as a blow, or a sprain is often obtained. Exposure to wet and cold, especially if associated with fatigue, is another predisposing factor.

The micro-organism most frequently found is the *Staphylococcus pyogenes aureus*. The streptococcus may be found in children, and the organisms of typhoid and pneumonia may be present either in pure culture, or more frequently mixed with staphylo- or strepto-cocci. The colon bacillus has been found only in mixed infections.

The result of the inflammation of the medulla is that the part becomes greatly congested, fluid is poured out from the engorged vessels, and pus rapidly infiltrates the tissue and finds its way to the periosteum through the Haversian canals. The veins are thrombosed, and this thrombus becoming infected, may be partially liquified, and portions of it carried to

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distant organs, producing pyæmia. The disease may spread so rapidly that pus shall be found beneath the periosteum within a day or so from its commencement. Necrosis of the bone is caused by the toxins produced, by the pressure of the inflammatory exudate, and by the arrest of circulation through the thrombosed veins. The pus may fill the whole or part of the medullary cavity, or form several small abscesses in it. The periosteum may be stripped from the whole diaphysis and the bone lie loose, bathed in pus and surrounded by the thickened and inflamed periosteum, as in the first case reported below.

In some cases the infection is so virulent that the periosteum in places may become gangrenous, and the infection spread rapidly to the surrounding soft tissues.

After the active symptoms have subsided new bone may be deposited beneath the periosteum, forming a sheath for the necrosed portion of the bone. In cases where the pus has been evacuated early, more or less of the periosteum may again become attached to the bone, but fistulous openings remain wherever the periosteum has been destroyed.

The symptoms vary in different cases, some presenting much more severe constitutional disturbance than others, though local manifestations may be more pronounced in the less severe cases, but not always so. The following cases are of interest in this connection :

Mary G., a child of four years of age, was admitted to hospital suffering from severe pain in the abdomen; temperature, 104° ; pulse, 140; tongue dry, respirations rapid. She was too ill to be able to give us much information and soon became quite delirious. She lay with both knees drawn up as if suffering from peritonitis. Every movement of the limbs or pelvis caused her to shriek with pain, so much so that it was impossible to ascertain where the pain or tenderness was most acute. The abdomen was tense, the spleen enlarged, but the heart and lungs showed no signs of disease. The leucocytes numbered 60,000; the temperature continued high and rose in the evenings to 105° and the pulse to 150 or over. She became rapidly worse. No local swelling could be made out. She was seen by several physicians and surgeons, but we were unable to arrive at an exact diagnosis. She died the fourth day after admission and the post-mortem revealed the left ilium completely separated from the sacrum, pubes and ischium, and lying in an abscess cavity surrounded by the stripped-up periosteum. The left hip joint was also inflamed and contained a slight quantity of pus. The organism present was that most usually found, the *Staphylococcus pyogenes aureus*. Septic infarcts were found in the kidneys, spleen and pleuræ.

As a contrast to the foregoing case may be mentioned two cases, boys of six and seven years, which were seen later, and both admitted the

same morning. In these cases the constitutional symptoms were not nearly as severe, the temperature on admission being 102.5° and the pulse 115 in one, and 102° and 110 in the other. They each complained of pain in the right leg, but were able to walk with assistance. On examination there was a reddened, swollen and œdematous area over the upper end of the right tibia which was hot and very tender. The leucocyte count in these cases did not reach over 25,000. The operation confirmed the diagnosis.

Another case showing still another type of the disease was that of an errand boy, aged fourteen, who presented himself after having suffered pain in the right leg for three weeks, which he thought was rheumatic. He was very pale and anæmic and extremely weak. He had had rigors followed by profuse perspiration, loss of appetite and diarrhœa; temperature, 103° ; pulse, 120, weak and soft. On examination there was a slight fulness over the lower end of the left femur posteriorly and tenderness, but no particular redness or œdema. A considerable amount of pus was evacuated, the lower end of the femur was denuded of periosteum posteriorly, and a small area was so softened that the interior of the bone was easily explored and pus and spicules of bone removed. The patient did badly for about two weeks, when he was injected twice with anti-streptococcic serum, after which he rapidly improved, and eventually made a good recovery.

Another very interesting case was that of Mr. B., aged forty-seven years, a contractor's foreman. When I first saw him he was suffering from a severe attack of pharyngitis due to sewer gas poisoning. Temperature, $101-102^{\circ}$; pulse, 100-110. After four or five days the throat became much better. On the evening of the sixth day he was taken with a severe rigor followed by a rapid rise in temperature to 105° ; pulse, 140. He complained of pain in the arm just below the right shoulder. On examination there was tenderness over the upper part of the right humerus, but no appreciable swelling. The next morning the temperature was still high; pulse, rapid; patient was delirious, but resented any movement of the arm. There was no particular swelling. An operation was performed the following day. The diaphysis was affected at its upper end, and the shoulder joint contained a slight amount of sero-purulent fluid which contained the staphylococcus in pure culture. The patient did not improve much, so was injected with anti-staphylococci serum. The serum had very little effect, and after two or three days he became rapidly worse; low muttering delirium, high temperature, rapid feeble pulse. Pleuritic signs developed in both sides of the chest. Temperature before death reached 106° . No post-mortem was obtainable.

The disease may occur in infants (acute epiphysitis). One case I saw in June, 1906, a child of four or five weeks old. The parents had noticed

the ankle swollen and reddened for two or three days and the child had been feverish and very fretful. On examination we found considerable swelling over the lower tibial epiphysis and ankle joint. It did not extend up the shaft. The part was hot, red and œdematus and fluctuation was easily obtained. On operation the whole lower epiphysis was found separated from the diaphysis and almost surrounded by pus, which also filled the ankle joint. The child died two days after the operation.

The diagnosis may be easy, as in several of the preceding cases, where there was redness, swelling, pain and tenderness over the region of the epiphyseal cartilage, when first seen. Other cases are much more difficult and may be mistaken for typhoid fever, or show signs of peritonitis, as in case 1, or of tubercular infection as seen in the case of the errand boy. Some cases may be mistaken for rheumatism, or acute septic inflammation of a joint, and others again may be confounded with erysipelas.

Rheumatism usually affects several joints, shifts from one to another and is accompanied with acid sweats. The tenderness is in the joint, whereas in osteomyelitis the pain and tenderness do not shift from one place to another, but continue where they first originated, though in some cases foci exist in more than one bone; on careful palpation tenderness is most marked above or below the joint, over the epiphyseal cartilage, not in the joint. Those cases where the joint is also involved as well as the bone, are not likely to even suggest rheumatism, as the symptoms are so pronounced and severe.

In typhoid fever there are usually prodromal symptoms for several days before very severe constitutional disturbances are set up, and the temperature usually rises gradually for a few days after the first visit, whereas in the bone affection there may be no preceding symptoms, the disease setting in abruptly with a *chill* followed by a rapid rise of temperature which *continues high* until the pus is evacuated or death occurs. The *pain and tenderness over a bone* are the two most important available guides, and the latter may usually be elicited even though the patient be comatose. In difficult cases a leucocyte count should be made. We have always found a well marked increase of leucocytes in osteomyelitis, which is not present in uncomplicated cases of typhoid. The pulse rate is usually slower in typhoid. The Diazo reaction of the urine may be present in both. The Widal reaction is not obtained in the bone disease unless the patient be suffering or recovering from typhoid at the time.

In miliary tuberculosis the onset is not usually as sudden, the temperature is more irregular and the breathing more rapid. Foci may be found in the lungs or glands, and the leucocyte count is not high. As in

typhoid, there is not the definite history of pain and acute tenderness or pressure over some bone, nor the objection to movement of the limb.

In cerebro-spinal meningitis there may be the utmost difficulty in differential diagnosis, especially in those cases where the osteomyelitis affects the spine or cranium, as is shown in Keen's series of sixty-nine cases, where the cranium was affected in twenty-two, and the trunk in seven cases.

The pulse rate is usually slow in meningitis, the neck rigid, and Kernig's sign may be elicited. If in much doubt a lumbar puncture should be made when a turbid fluid containing diplococci is drawn off. In the bone lesion there is severe pain over the locality and in a few days swelling and redness may appear, and marked tenderness on pressure. Instead of the abscess pointing over the spine, it may form a retro-pharyngeal abscess, or burst into the posterior mediastinum, or track down the psoas muscle, and point above or below Poupart's, as seen in a case in Mr. Pierce Gould's clinic at one time. The inflammation may cause irritation of the spinal nerves, causing pain, which may aid greatly in localizing the trouble.

In erysipelas the main point in differentiation is the absence of deep-seated pain and tenderness. Tapping on the heel elicits acute pain in osteomyelitis, but not in cases where the inflammation is superficial.

A good working rule is given by Berg :

"Every child and young adult in whom there is a sudden onset of high fever, rapid pulse, etc., for which no adequate cause can be found—examine the bones, especially in those regions most frequently involved."

A radiograph may aid greatly in diagnosis. It is to be hoped that the estimation of the opsonic index for various bacteria, may assist in diagnosis.

Prognosis : The disease is always serious. The child may die in a week or ten days from general septicæmia ; or if he survive this pyæmia may result, ushered in by recurring chills and irregular fever, as new abscesses form in the kidneys or lungs, or in some other bone or joint. Another fatal complication is fat-embolism. The neighboring joint is very liable to become involved either by an acute synovitis, or a septic arthritis. The former may rapidly subside after treatment of the bone lesion and leave very little or no impairment of the joint ; the latter makes the prognosis grave indeed and may necessitate amputation. Should this not be called for, ankylosis is likely to occur, if the patient survive. Pathological fracture may occur from separation of the epiphysis or from fracture of the weakened shaft. In long continued cases *anæmia* is a marked feature. One of the most serious results is deficiency in growth owing to the injury to the epiphyseal cartilage. Marked shorten-

ing may occur from extensive necrosis, or from spontaneous dislocation of the joints, and various deformities may arise from bending of the bones. In long continued suppuration the patient may succumb to exhaustion or to amyloid disease.

The treatment is almost purely surgical from the commencement. Calomel should be given to eliminate any poisonous material from the bowel. Salicylate of soda has been recommended by Kocher, but is of little use. The pain calls for opium. As soon as one has made a diagnosis no time is to be lost in operating. This should be done in a hospital if possible. The part should be thoroughly cleansed and made aseptic, and, under an anæsthetic, an incision made long enough to thoroughly expose the infected area. In most cases the periosteum has already been separated from the bone; if so, the pus is evacuated and the abscess walls swabbed with strong carbolic, followed by alcohol. In these cases the medullary cavity is easily reached, the bone being frequently already softened by the disease, so that the cavity can be explored through it and the pus and débris removed. In other cases, especially those operated upon shortly after the onset of the disease, pus may not be found beneath the periosteum and one may begin to doubt his diagnosis, but in these cases the periosteum is usually inflamed, and easily raised from the bone. When it is remembered that the disease begins in the medulla the operator should persevere, raise the periosteum over the part where tenderness was most marked, chisel through the bone, remove the infected medulla, and curette the whole cavity. Enough bone should be removed so that the entire infected area can be thoroughly treated. The cavity is now disinfected either with strong carbolic, perchloride solution 1 in 1,000, or hydrogen peroxide, then packed with iodoform gauze, and allowed to drain by means of the gauze brought out through the wound or wounds. An antiseptic dressing is applied on the outside, and the limb carefully put up in a suitable splint. Great care is required in this so as to prevent contractures in the future.

By this early treatment pain is relieved, the risk of septicæmia and pyæmia reduced, necrosis lessened, and in short, the patient may be saved from months of suffering.

Should the temperature remain up antiseptic irrigations should be employed and warm antiseptic compresses used.

In cases of extensive necrosis it may be better to make two or more incisions through the soft parts, raise the periosteum, and open into the medulla, rather than make one long incision, and gouge a long trough out of the bone. The infected medulla can be removed through the several openings and irrigated with some strong antiseptic. Where septicæmia or pyæmia threaten or are present, quinine should be given, and stimu-

lants administered liberally. Patients should be fed well, and surrounded by the best hygienic influences, fresh air, etc. Iron is indicated later on, as these cases usually become very anæmic.

Complications, such as synovitis, arthritis, or foci in other bones call for treatment; the synovitis by aspiration, the arthritis by incision and washing out with perchloride solution 1 in 5,000 or normal saline solution; and the other foci by methods indicated above for the primary condition.

We sincerely hope that the methods advocated by Wright may prove of great assistance in treating these most serious cases.

The operative treatment for the removal of sequestra and for the correction of the various deformities which may arise as a result of this disease I must leave for the present.

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GENERAL ANÆSTHESIA.*

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(“There is a widespread impression that to give chloroform is a minor act, that the power goes with the granting of the diploma, and the significance of the procedure is sometimes emphasized by the remark, ‘Well, if a man cannot give chloroform, what can he do?’”)

THESE are the words of Sir Frederick Treves, and thus would seem to indicate that, heretofore at least, they have been as careless in regard to instruction in anæsthesia in England as we have been here. When one considers the great importance of this work, and the grave danger involved, one cannot help being astonished that so little attention has been paid to it. There is probably no one act, which the young physician may so soon be called upon to perform. Perhaps no argument is so eloquent as a reference to statistics. The returns to the Registrar-General for England show that there were more deaths from anæsthetics in 1901 than in any year since 1863. These returns of course represent a heterogeneous lot of administrators and stand in rather marked contrast to the results of administrations from only skilled hands, since Von Nussbaum saw chloroform administered 40,000 times in Berlin without a single death, and at the Edinburgh Infirmary there have been 36,500 administrations of chloroform with but only one death.

In the administration of anæsthetic, our duty is twofold. First, to the patient; and secondly, to the surgeon. In the case of the patient there should be no possibility of danger on account of any lack of skill in

* Given as a talk at the Orthopedic Hospital, Toronto, 7th December, 1907.

the administrator. To the surgeon the administrator owes a safe, even, smooth anæsthetic state. For our purpose this afternoon, general anæsthesia may be produced by nitrous oxide gas, by chloroform, by ether, by the mixtures, of which the A.C.E. mixture is a type, and by the sequences of which gas and ether is a type, and our remarks will be confined to these agents. Now, the first question which one should ask oneself, is not which is the best anæsthetic to employ, but rather which is the best anæsthetic for the particular case in hand. Ether and chloroform, since the first days of their introduction, have been rivals for the favor of the surgeon. We have heard much discussion, a great deal that I think fruitless, not to say unfortunate, from the student's point of view, at least regarding this matter of preference. I think it is unfortunate because the student whose ideas are being formed is apt perhaps to go away with the impression that ether is always preferable to chloroform, or *vice versa*, whereas the facts are that both these anæsthetic agents are of the greatest possible value to us. As we shall see, one cannot always take the place of the other at all times, and it is perfectly true to say that "he who is acquainted with the giving of both of them, will get better results than he who is only acquainted with one, and it would be also true to say that more depends upon the skill of the administrator than upon the particular anæsthetic which he employs, or the special kind of inhaler which he uses."

Let us imagine there is a patient here to be anæsthetized and then arises the question, what are we going to give him? Our decision will be based upon the well attested knowledge which we have regarding these anæsthetic agents, and upon the information which we can obtain by examining the patient. Now, as to the age of the patient, it has been perhaps generally adopted that small children shall always be given chloroform. The fact is that they do take chloroform easily, but it will be well for us not to forget that they can take ether, or better still, one of the mixtures of ether and chloroform, equally well. And when we remember that in some cases toxic symptoms apparently due to chloroform poisoning have shown themselves hours after the anæsthetization it may be that one of the mixtures is safer. It may also be said that the region of the body where surgery is to be done has a bearing upon our choice of the anæsthetic agent. Let us start at the head and go down. In the surgery of the head and neck we have the field par excellence for chloroform because of the lesser congestion and greater freedom from troublesome bleeding than is present under ether narcosis. I am speaking, of course, of major operations. In dental work or extractions, gas or ether are preferable because of their greater safety for that kind of work. In operations about the chest chloroform or one of the mixtures will perhaps serve best, although special reasons will sometimes modify

general considerations. In abdominal work either anæsthetic may be employed. In operations on the extremities, including fracture setting, reduction of dislocations, etc., I believe that ether is the preferable choice.

Then, again, there are types of patients. For instance, the fat, thick-necked, plethoric class are much better subjects for chloroform than for ether, for under the latter they breathe with great difficulty owing to their thick tongues and free secretion of mucus. The cachexic, weakly type of individual should by preference receive ether, because it is not so prone to depress blood pressure as is chloroform, and such a condition is most readily induced in such patients.

Now we come to the examination of the patient, and there are some questions which we must answer. First, has this patient any valvular heart disease. If we find that he has, it does not contra-indicate the taking of a general anæsthetic, but those suffering from such disease often take chloroform or mixtures containing it, very often better than ether. The main need with such patients is, that the induction should be gradual, and once anæsthesia is induced it should be evenly maintained. In case of myo-cardial disease ether or the chloroform-ether mixture is strongly indicated. Chloroform and nitrous oxide are strongly contra-indicated. Is the patient the subject of bronchial affections? It is generally admitted that an acute bronchitis contra-indicates ether. The same may be said of all bronchial and pulmonary affections in general. Cases of acute chest disease which have taken on a surgical aspect form, perhaps, the most dangerous group for anæsthetization. No matter which anæsthetic is chosen, the general principle should be one of light anæsthesia, with, perhaps, the chloroform-ether mixture. And if the heart is bad, notwithstanding this apparent contra-indication, ether may be the safest agent to employ.

Now as to the question of renal insufficiency, here it is generally supposed that if there is chronic disease of the kidneys chloroform is preferable to ether, but the greatest degree of safety will probably be given by preventing a long anæsthesia of any kind.

Now we will suppose that a choice of an anæsthetic has been made, and I want to say just a few words on the attitude of the administrator to the patient. It has been my experience, and I do not think it is difficult to understand, to find that invariably the patient is fearful regarding the anæsthetic. If I may quote from Sir Frederick Treves again, when he says, speaking of the feelings of the patient, "They are told they will not know of the surgeon's work; but they do know that they will be unpleasantly conscious of those palpitating sensations which precede the anæsthetic sleep. To lie on a table and breathe the subtle vapor, which will soon cloud the anxious brain and bring the throbbing personality into an outer and uncertain darkness is no slight ordeal." I think that sums

it up pretty well, and the lesson for us is that we should use every endeavor to allay the patient's fears. The anæsthetist's attitude should be one of kindly and sober assurance, every effort should be made to convince them of your care and experience; it is well to tell them the care of the anæsthesia will be your sole charge; to explain to them perfectly about how to breathe, and any other little point which may be called for by the special apparatus you will be using. Then patients always worry as to whether their heart will stand the strain. Always examine it with perhaps a little more ostentation than usual. If there is heart lesion and they do not know it, then they should on no account be told. If they have such and do know it, then it can be truthfully, and it should be, emphatically minimized. It is not well to have noise, talking, and such like going on during the induction period, for the hearing of such patients is very sensitive. Now we will suppose that we are going to give chloroform. I am only going to speak of the method of giving on an open mask. The instruments intended to give a mathematically correct percentage of vapor of chloroform and air, such as the Vernon Harcourt, are ideal in theory, but they have not as yet come within the range of general every-day usage. The simple mask, such as this one here, is valuable because of its simplicity, because of its portability and cleanliness. It gives, with a little experience, good results.

Now I am not going into all the details of administration, for I think that with that you are probably familiar, but there are just a few words which may be said. The object is to present to the patient an equable chloroform atmosphere. Let your vapor be mild at first, so as not to cause any sense of suffocation or produce respiratory spasms or breath-holding. It is better to drop on your chloroform than to pour it on. You must steer between the two extremes of too great rapidity and too great slowness, about one drachm every four to five minutes would be a fair average. If the patient struggles or there is breath-holding the anæsthetic should be partly withdrawn, else there is danger of an overdose.

Now the signs of full surgical anæsthesia with chloroform are quiet, regular breathing, fixed and rather contracted pupil, muscular relaxation and loss of the eye reflex. When the patient has reached that state, and not until then, will it be safe to allow the surgeon to proceed, and when the patient has been brought into this condition it should be your study to keep him in that state evenly. With chloroform it is never safe to be up and down and jerky with your giving. The signs of an overdose are widely dilated and fixed pupils, a feeble running pulse, complete absence of lid reflexes, and dusky pallor of the face with separation of the eyelids. If I were to say to you to be watchful of any one special thing in chloroform, then it would be the pulse and the color of the lips and face.

Now ether may be given on an open mask, but this method is not very useful except in the very weak, because of the difficulty we would have in getting the patient under. It is also given with a semi-open instrument. This method is simple, safe, but rather wasteful, and also after long administration affects very considerably the air of the room. Here, again, considerable time has to be employed in getting the patient under. There is apt to be troublesome struggling, and it may be here not out of place to say that struggling with ether, unlike chloroform, is an indication generally speaking to push the ether. To obviate the struggling and unpleasantness to the patient of this first stage of ether administration, it is often a good plan to start with one of the chloroform mixtures. Ether is also given with the so-called closed inhalers of which the Hewitt modification of the Clover instrument is the best. The essential difference between these two is in the wider breathing space, and you will appreciate this if you try for yourself and breathe through the instruments and note the contrast.

The technique of using the instrument is simple. Having adjusted the face piece, the indicator should be turned on about one-eighth of an inch, and as tolerance is established should be turned on more and more. If there is coughing or breath-holding or respiratory spasms, turn the indicator back, but as I have before said, if there is struggling, it may be turned on more rapidly. The signs of ether anæsthesia are the same as chloroform, excepting that the pupils are less contracted and more mobile, and, of course, there is much marked duskiness of the skin. Now that is a satisfactory anæsthesia for the surgeon, and possesses for the patient a high degree of safety, but it has one drawback that has already been referred to, that is the distress of the patient and the long time consumed in inducing it.

Can we only bridge over that distressing preliminary state with a quicker and a more rapid anæsthetic? We can by using nitrous oxide gas. Nitrous oxide gas is said to be pleasant to inhale. It abolishes consciousness in about twenty seconds and is practically without danger. Here it is given just to bridge over, not as the dentists use it, where it is pushed until a full narcosis is obtained. There are just a few words essential to the successful administration of the gas and ether sequence which I would like to mention. Be sure your face piece fits tightly, so that the gas does not escape; do not pour your ether into the chamber until the patient has taken the gas. Tell them that they will hear the roar of the gas, and having said, "Now I am going to turn the gas on," press the face piece closely at the same moment, and when the gas bag is half empty pour in your ether and commence turning your indicator rather more rapidly than when you are not using the gas. It is not

uncommon with this method to have a patient completely anæsthetized and ready for the operation in from three to five minutes.

I wish to say, as a final word, something regarding anæsthetic emergencies and their difficulties. These are divided by Luke of Edinburgh into those which are due to circulatory depression and failure, and secondly those which are due to respiratory difficulty. Circulatory failure may be directly due to, first, the toxic action of the anæsthetic; secondly, extrinsic cause, not actually overdose. Syncope may occur in the early stages from the relative overdose due to cardiac inhibition from the effect of too strong a vapor on the vagus nerve. The symptoms are sudden pallor, rapid failure of the pulse and respirations with wide dilatation of the pupils. The pulse and breathing may even cease within a few seconds and before anything whatever can be done towards resuscitation. The extrinsic causes of cardiac failure are, first, fright at the very beginning; secondly, unfavorable condition of the patient, as great weakness; third, shock of the operation during imperfect anæsthesia and the reflex effect of threatened vomiting.

Respiratory difficulty may be due to the toxic effect of the anæsthetic when it is usually associated with cardiac failure, and, secondly, it may be due to respiratory obstruction. Thus there may be (1) spasm of the muscles at the base of the tongue, allowing it to fall back; (2) spasms of the muscles of the jaw and neck; (3) spasm of the laryngeal muscles; (4) general spasms of the respiratory muscles, including the intercostals; (5) foreign bodies entering the air passages, such as solid vomited matter, excessive mucus, and false teeth; (6) position of the patient, such as the prone position on the face, in operations on the spine.

The symptoms are increasing stertorous breathing, duskiness of the face, becoming markedly cyanotic; when complete the chest may heave, but no air enters or leaves. This, as I have said, is the concise classification of Dr. Luke, of the Edinburgh Infirmary, and it is, I think, a very useful one in studying this important phase of the subject. Now, the most important thing, of course, is the treatment of these cases, and much will depend on knowing the right thing to do, and on being so cool and clear-headed as to be able to do that thing in the right way and at the right time. The only way to insure this is to have what one would do in such a case so thoroughly understood that it can be performed almost automatically—it should be a regular drill.

Now for the purpose of treatment, Luke divides these patients into two classes, *the pale* and *the cyanosed*. We will consider the pale patients first, because I think we may say that their condition is the more serious. Such patients are usually suffering from circulatory depression, and it is likewise true to say that they are usually chloroform patients. What are

the measures which we can use to revive such a patient? They are these:

- (1) Inversion of the patient.
- (2) Hypodermic injections of stimulants, such as strychnine, digitalin and strophanthin.
- (3) Artificial respiration.
- (4) Tongue traction.
- (5) Application of heat over the heart and about the body generally.
- (6) The use of hot salt solution into the bowel, under the skin, or directly into the vein.

We have put these down not in the order of their value. The question arises, which one practice possesses the most value in itself, because obviously that is the thing which we should do first. Now, I believe the most important thing to do is to get the patient's head low at once. Children may be completely inverted; adults, if on a table, should have their head lowered by tipping up the table.

In the life of Dr. Sims, he tells of seeing a patient under chloroform who was being operated on by the famous Dr. Nelaton, when she suddenly showed signs of heart failure. She was promptly inverted, and after what seemed a long time, the pulse was again perceptible. She was put in a prone position and again she seemed as if dead. The second time she was put in an inverted position, and after what seemed a long, anxious wait, nothing else being done, there was again a return of the pulse and again she was laid down, only to have the same results, and the third time the head was lowered, and, as Sims naively expresses it, no one dared put her down until she was not alone wide awake, but kicking vigorously. This story would seem to show the value of simple inversion, since the same results followed three different inversions, but we have other measures of great value, and I think a general treatment should be as follows: First, as we have said, invert the patient completely if it can be done; then have artificial respiration performed. If you have plenty of help, hypodermic injections may be given, warmth may be put over the heart, and hot salt solution at a temperature of 120° may be prepared and used in one of the ways suggested. With such measures these cases will often be speedily restored.

Of the treatment of the cyanose cases. These patients are usually suffering from respiratory obstruction. When the breathing stops the patient's mouth should be opened by means of a mouth gag and the tongue pulled out. If that does not clear the way the fingers should be passed back into the throat to make sure that there is no foreign body obstructing. If there is blood or mucus it can be sponged out. If still there is no effort to mend matters, tongue traction may be tried for a few

moments, but if still without result, no time should be lost in performing tracheotomy, after which artificial respiration should be practised, and it will be well to give an injection of strychnine or ether and hot salt solution.

Now I have endeavored this afternoon to give a fairly comprehensive sketch of the well-founded facts of general anæsthesia. It may be that there have been wearisome details, but I would like to emphasize that in practice the attention to the detail is oftentimes the essential difference between a man who gives an anæsthetic well and he who gives it only imperfectly. Let me say to you that in my opinion when you have carried the patient safely through a general anæsthetic that you have performed no minor act. If I had time, I could point out to you how the attention to every little detail meant the difference between safety and danger, between the relatively comfortable patient and the relatively uncomfortable patient, perhaps, between a very slight post-operative sickness and a very great degree of post-operative sickness, and not infrequently it will mean the difference to the surgeon of an operation smoothly performed and one out of necessity hurried and unnecessarily complicated. I think you will agree with me that these are considerations which merit your very close and very earnest study of this subject.

TETANUS AND ITS TREATMENT.*

By W. J. CLARK, M.D., C.M., Toronto.

THE case which I report to you is one that occurred whilst I was practising outside of the city. Patient was sixteen miles from my office, and as a result I saw him only once daily. The nursing was done by his mother and grandmother, and the notes I give you are such as I jotted down at the close of the day's duties.

The patient was a robust little fellow of eight years, a perfect type of rugged boyhood whose previous history presented a clean sheet. The *initial injury* occurred whilst he was playing barefooted in the horse stable on his father's farm. Jumping from a ladder, he alighted on a board through which a rusty nail projected point upwards. The nail penetrated the foot for a considerable distance between the metatarsal phalangeal joints of the great and first toe. The nail was withdrawn with difficulty and the wound bled freely. The mother bathed it with hot water and then applied a poultice. The following day the wound closed up and the little fellow played around as usual. The fourth day following injury the father remarked considerable stiffness in his movements, which was

*Read at the Clinical Society, Toronto Western Hospital.

still more noticeable on the fifth day. The sixth day he joined his parents on a visit to his aunt, and ere they reached the end of their journey the patient had a convulsion. Half an hour afterward the little fellow was in bed and medical assistance summoned. The seventh day convulsions were frequent. His condition gradually grew worse, and on the morning of the eighth day I saw him in consultation. The condition obtaining at that time was as follows: Facial expression was one of fear; skin surface moist; pupils dilated; alæ nasi distended; muscular rigidity was very marked, but particularly so in the flexor muscles of the toes in the region of the primary wound, as also the leg muscles throughout; pulse was 96, full and bounding, and temperature 99.2; respiration, 40 and very shallow. Convulsions had been occurring at intervals of from one to two hours, during which the episthotonus position was marked. During seizure pulse would rise to 120, respiration 50 or 60. Copious perspiration and great exhaustion followed the attacks. Bowels had not moved, but urine had been voided in small quantities. No nourishment had been taken for two days prior to my visit.

The treatment suggested and carried out was as follows: (1) All external sources of irritation were removed as far as possible; (2) initial wound was excised, douched with H_2O_2 and then pure carbolic; (3) 10 c.c. of anti-tetanic serum was given by means of hypodermic syringe, no other being available, and which necessitated four or five punctures; (4) the bromide and chloral prescription which had been given him was continued. On the ninth day condition was much the same; convulsions were as frequent; exhaustion greater; mental condition was clear, and the little fellow was quite bright and cheerful. Eight hours after the first dose of serum another 10 c.c. of serum was given, this time with suitable syringe. Injection was made in the abdominal wall, the first injection having been made in the affected limb. Instead of the bromide and chloral mixture he was given chloretone, grs. viii., which was repeated at the end of eight hours, as was also the serum injection. On the morning of the tenth day there was some improvement in his condition. Convulsions were less frequent and less severe; the muscular rigidity was not so marked; took some nourishment (milk), which was introduced by means of an opening between the teeth; swallowed with difficulty, but when given very slowly could manage it; bowels had not moved; urine voided in small quantities. The eleventh day was one of comparative freedom from convulsions; any little excitement, however, would induce one. When kept quiet his condition was one of comfort. Slept three or four hours. Took about a pint of milk during the day. No more serum was given, but chloretone was continued every eight hours. The twelfth day there was a marked improvement. No seizures; considerably less rigid-

ity; could move jaws some and took liquid nourishment freely; face and neck and trunk muscles quite relaxed; temperature, normal; pulse, 100; respiration, 28; bowels had moved; urine voided freely. The thirteenth day patient was improved in every way. Rigidity was confined to muscles of limb which was the seat of the primary wound. Chlorotone was withdrawn; purgative was given (calomel, grs. iii), followed by saline. Recovery was now uninterrupted, and two weeks from the day of his seizure patient was removed to his own home. It was fully six weeks, however, before the flexors of the toes were completely relaxed, and he could extend and flex them at ease.

THE BACTERIOLOGY.

The bacteriology of this disease has been well worked out, and is now on an established basis. In 1884 Carle and Rattoni found they were able to communicate this disease from man to animals by the injection of pus from an infected wound. In 1885 Nicolaier announced that he was able to grow a virus outside of the body and also that the contamination of a wound with the dust and dirt of the streets very often resulted in a case of tetanus. In 1886 Rosenbach, working along the same line, established the above contention by producing the disease in a guinea pig which had been previously inoculated with pus from a tetanic patient and went so far as to say that the specific virus was one of two bacilli which he described. In 1889 Kilasato, a Japanese, and Tozzoni and Cattani, of the Italian school, working independently, isolated the specific virus of tetanus which is now known to be the cause of the disease, and which they described as follows: It occurs in small threads or rods varying in size from 4μ to 5μ downwards; is anærobic, and grows best at a temperature of 36° C. to that of the blood. Its method of reproduction is by spores, and at blood heat sporulation will take place in thirty hours; otherwise it may take up to one week. Spores are exceedingly resistant to moist heat. Steam at 100° C. will require at least five minutes to destroy them. They will resist 1-20 carbolic for fifteen hours, and 1-1000 bichloride for three hours. The bacillus is found in garden soil, dust and dirt of streets, and the soil generally. Having been once introduced into a wound, the bacillus immediately begins to manufacture toxin, at first slowly, and may be destroyed by the tissue cells ere this process has taken place, in which case there will be no symptoms, but if, however, they are not destroyed, if any preformed toxin be introduced with the germ, or if any other germs be introduced along with the tetanus bacillus to engage, so to speak, the activity of the tissue cells and leave the bacillus free to generate its toxin, then we will have an earlier appearance of symptoms. The mode of distribution of the tetanic toxin seems

to be somewhat in dispute. That the bacilli remains and is always localized at the seat of inoculation is agreed by all. That the toxin possesses a remarkable affinity for nerve tissue is also accepted and nicely shown in the following: "There exists a peculiar affinity between the tetanic toxin and certain cellular complexes of the central nervous system, and this affinity is manifested not only in the case of the central nervous system of the living organism, but also in that of the dead spinal medulla and brain; that is to say, isolated from the organism. When an injection is used of an emulsion of these organs—that is, when the cerebral substance circulates with the blood—the tetanic toxin, finding the nervous substance in circulation, is combined with it before proceeding to exercise its action on the cellular elements of the central nervous system, which is thus spared."—Wassermann and Takaki (*Presse Méd.*, Jan. 22, '98.). This would indicate, whilst showing the remarkable affinity of the toxin for nerve tissue, that the toxin does circulate in the blood stream and the tissues and fluids of the blood; whereas the following would prove the transmission by the motor and sensory nerves: "The result of observers with regard to the passage of the toxin to the nervous system, directly along the nerves, has been personally confirmed. It was found that a certain dose of the toxin injected into the substance of an exposed nerve, the puncture afterward being closed, could produce tetanus, while no result followed the injection of the same quantity into the muscles after a portion of the nerve in connection with the part had been removed."—Marie (*Ann. de l'Inst. Pasteur*, July, '97.).

The stage of incubation varies greatly. In animals it may vary from six hours up till two or three weeks, some animals being much more susceptible than others. In man the stage of incubation is usually looked upon as being from three to four days up till as many weeks. What I have said is very nicely put in the description of Clifford Albut, who says: "The tetanus bacillus takes possession of the premises, no matter where they may be, whether in the tail of a mouse, the mouth of a horse, or the foot of an urchin, sets its house in order, and immediately begins to manufacture toxin. The manufacturers never leave the premises, remain at home continuously; but their products are distributed with an impartial hand, first to their neighbors in the immediate vicinity and from there far and wide until the whole field is covered. The channels of communication are the motor and probably the sensory nerves, and not by the tissues and fluids of the body.

THE SYMPTOMS.

The symptoms of tetanus are: The occurrence and recurrence of spasm of the voluntary muscles. Various groups of muscles may be

affected. The temporal and masseter muscles when in a state of spasm prevent the opening of the mouth, and give rise to the popular name of lock-jaw, or, as we would call it, trismus. When the tetanic spasm affects the muscles of expression a characteristic condition of *risus sardonius* is produced. When the muscles of the back are involved we have opisthotonus. When a violent clonic spasm supervenes upon a tonic contraction of the abdominal muscles we have the position of emprosthotonus. Sometimes the body is bent to one side, and then we have what is called pleurosthotonus. The tonic spasm is always greatest in the region of the primary wound. Bearing this fact in mind, I believe it will assist materially in locating the primary wound. The tetanic muscle is hard to the touch, stands out prominently, and is exceedingly painful. The clonic spasm usually has an exciting cause, generally some trifling irritant acting through the senses—door closing, light through the window, some movement on part of the patient, etc. The general condition is much less affected than one would suppose from the severity of the symptoms. The mental condition is clear usually to within a few hours of dissolution. Great insomnia. Fever is usually present in a small degree. Just before death hyperpyrexia is common. Perspiration is usually profuse in and during the tetanic convulsion—it is sometimes sufficient to saturate the patient's clothing and bed-linen. The pulse is a pulse of exhaustion, increasing during the spasm; towards the end in a fatal case it goes with unaccountable rapidity. Respiration depends on the extent of involvement of the respiratory muscles; spasm of these muscles may be extreme enough to cause instant death. Urine is usually normal, although there may be albuminuria or even hæmaturia. Constipation is always present, usually of severe type.

DIAGNOSIS.

Diagnosis is not, as a rule, difficult. In hydrophobia there is a different history, moreover; one group of muscles is not involved more than any other group, and there is complete relaxation between spasms. In strychnia poisoning, previous history, suddenness of onset, spasms are clonic but not tonic, and the rapidity with which death or recovery takes place, serves to materially assist in differentiating these diseases.

PROGNOSIS.

The percentage of deaths from this disease is variously estimated at from 80 to 90 per cent. In the Medical and Surgical History of the War of the Rebellion it was 89.3 per cent.

TREATMENT.

(1) Preventive. In the year 1903 there were reported 406 cases of tetanus following the American Natal Day celebration, and in 1907 there were 73 cases reported. These results are attributed to, and rightly so, the prophylactic use of antitetanic serum in all wounds that have been contaminated with dust of streets, soil, etc. I believe the time will come and that very soon, if it is not here already, that a medical man will no more think of treating a wound that has been in contact with a possible source of infection of the tetanic bacillus without first giving from 20 to 30 c.c. of serum as a prophylactic dose than he does now of treating a case of diphtheria without using the diphtheria antitoxin. There is no doubt that there are a great number of wounds, occurring daily, which have been contaminated with dirt, soil, etc., that a medical man never sees and that they do not result in a case of tetanus. However, those cases that he does see, and occurring in stablemen, hostlers, gardeners, also those punctured wounds the result of rusty nails or sticks, etc., should certainly be treated with the serum as a prophylactic. Further, the wound itself should be opened up, well irrigated with sterile water and then H_2O_2 and finally the serum applied locally, as suggested by Dr. Pritchard of the Rockefeller Institute in an admirable address given before the Pathological Society on this subject last winter.

(2) The general treatment of a case of tetanus consists of, in the first place, removing all sources of reflex stimuli as far as possible. All sounds, noises, and excess of light must be prevented; all manipulation, such as taking the temperature, catheterization, enemata, feeding, etc., must be done as gently as possible. These we will deal with the treatment under (1) local, (2) specific (3) systemic.

(1) The local treatment is much the same as described under the heading of prophylaxis, except where the wound having healed, excision of the wounded area should be done, and then treated as suggested above. In the case I have just reported, I stated the tonic contraction was greatest in the limb which was the seat of the initial injury. Further, in some nine cases of tetanus which I observed in the horse, all those cases where the point of entry of the germ was not located, the first symptom noted was trismus or spasm of the masseter muscles. In these cases (three in number) of trismus examination of the mouth cavities showed abrasions from sharp teeth, etc., which I believe was the point of entry of the bacillus. Therefore, under the heading of local treatment I would say that all cases where lesion is not discoverable, the mouth and nasal cavities should receive local treatment. Alkaline spray, then H_2O_2 , and all abrasions should be touched with pure carbolic.

(2) Specific Treatment. Ever since the discovery of the cause of tetanus in 1889, hopes were high that a serum would be prepared that would do for us in tetanus what it has done in diphtheria. The first serum prepared was by Tizzone and Cattani, and the results obtained from its use in animals both as to immunization and curative effects during the attack, were good. Its use was then extended to man. It is now fifteen years since it was used for the first time, and the reports seem to be very contradictory. Nevertheless, the general consensus of opinion is that the results are disappointing. One thing we are sure of, and that is the general death rate in tetanus has not been reduced in the same way that the general death rate in diphtheria was after the use of the diphtheritic antitoxin. Various methods have been tried in introducing the serum into the system, viz., subcutaneous, intravenous, intraspinal, intracerebral, etc. Careful study of these different methods has shown that they do not possess any advantage over the subcutaneous, besides being more complicated. Why, then, is it that we get such remarkable results when the serum is used as a prophylactic and do not get them when used during the disease. The explanation might be that in all or nearly all cases of tetanus we are dealing with a mixed infection and we know that in a diphtheria attack where we have other germs active we do not get the results that we do when it is a straight diphtheria infection. Again, we have seen the affinity that the tetanus toxine exhibits towards nerve cells generally and the transmission of this toxin by the motor nerves. This being the case, one can readily understand how difficult it is to bring the antitoxine in contact as nearly as possible with the source of the toxine. In my case I believe one explanation of the favorable result is the fact that I think it was a pure infection; and, moreover, I think the antitoxine that I introduced was just sufficient to throw the balance in the direction of recovery. Therefore, I say the antitoxine should be used early subcutaneously and locally.

Under this heading, also, we must deal with what is called the bacilli treatment, or the carbolic acid treatment. Carbolic acid reduces reflex irritability, pain reduces fever, and seems to possess a definite antagonism towards the tetanic toxin. On this account it is highly favored in this disease. It is used as follows: Subcutaneous injections of a 2 per cent. ac. carbolic solution (glycerine and aqua) are given at frequent intervals, so that in an ordinary case the patient will get 3 grains in the twenty-four hours. This is increased up to 6 grains a day according to the severity of the case. Morphia is added to the solution sometimes for the relief of pain. From the study of Italian literature this treatment would seem to give better results in acute cases than the antitoxine. This is the treatment used by veterinarians; they use a 25 per cent. solution of ac. carbol, glycerine and water. Sloughing almost always occurs.

(3) Systemic Treatment. This is important. I would not have this overlooked, as some of us are apt to do. In this case, chloral, bromides, hyoscamus were used without results. Chloroform during the spasm is used. Nitrite of amyl is said sometimes to abort a seizure. In the case I have reported I used chloretone, and from the results I obtained I certainly would place it as one of the first remedies to be used in the next case that I come across. As this drug was taking effect one could notice a quietness and restfulness that was marked. As the effects would subside it was easily noticeable to the attendants.

CLASSIFICATION.

Various classifications of this disease have been made, such as traumatic, idiopathic, tetanus neonatorum, and puerperal tetanus, etc., but since we know the bacteriology of the disease we know that the bacillus must obtain entrance into the body and therefore every case is traumatic. Like osteomyelitis or erysipelas, so tetanus. The trauma may be external or internal. If it is external it is more difficult. There are those cases which are difficult of explanation, such as in simple fracture, but it seems to me that some lesion along the digestive tract will explain a good many of the idiopathic class.

In conclusion, gentlemen, in the citation of this case and the brief resume of the subject, I have not contributed anything new on the topic, but I would like to emphasize some of the points here taken :

1. Look for site of inoculation. It is indicated by the first group of muscles in which tonic contraction occurred. When found, use local treatment as I have described.

2. Prophylaxis is the keynote of all treatment. Learn to use it in every case of wound in contact with possible source of infection. Educate the public to the necessity of it.

3. In a case use the local, the serum, the bacilli, and the systemic treatment.

4. Remember that every case of tetanus does not proceed to dissolution.

MEDICAL LEADERSHIP.

By JOHN HUNTER, M.B., Toronto.

IT is said that nine-tenths of all productive labor is drudgery, hence the benediction, "blessed be drudgery," pronounced on this form of labor.

It is also true that by far the heavier portion of the burden of all labor—mental and physical—has to be borne by the average man and woman.

In agriculture, the land is cleared, soil tilled, grain sown, harvest reaped, flocks and herds cared for by the average farmer. In the industrial arts the average man runs the machinery that turns out the finished product. He transacts the great volume of trade in mercantile pursuits. He is the mainstay in our great transportation systems. He guides the vessels and speeds the trains that link shore to shore and city to city. In the learned professions—in college chair, in pulpit, at teacher's desk, in courts of justice, in hospital and in sick chamber, strenuous duties fall to the lot of the average man. Since all this is true, it naturally and logically follows that the epithet "average man" carries with it no tinge of reproach. On the contrary, to be in the class of average men implies the possession of technical skill, industry, intelligence, integrity, and a liberal supply of good common sense.

Volumes could be written in praise of the merits of the "average man," yet history teaches us that in every vocation, in all regions, in every stage of civilization, and throughout all time, every great advancement has inseparably associated with it the name of some great leader. What a sombre story the world's history would be without the achievements of a Noah, Abraham, Moses, David, Cyrus, Alexander, Cæsar, Columbus, Napoleon, Nelson, Wellington, not to mention the countless host of immortals in literature, art, and science. Much and valuable work must be done by the average man, but great achievements are the products of the broader outlook and large capabilities found in the attributes that constitute leadership.

HISTORIC LEADERSHIP.

The history of medicine is practically a record of the lives of a comparatively small number of medical men. If we go back to the "ancient of days" in Egypt, Arabia, Greece, and Rome, we find the work and teaching of a few marking out—like mileposts on the highway—the progress made in the evolution of the science and art of medicine. The path these men trod was narrow and tortuous and uphill all the way. The torches they had to use to illuminate the dark passages on the way gave out—as ours often do now—more "soot" than light. Traditions, mythology, conjurations, religious dogmas, supernatural agencies, were each and all appealed to for guidance. These satisfied the "rank and file" then, as routine methods satisfy the mass of physicians now, but not those restless spirits whose virile intellects could not be satisfied with anything but truth itself; hence we find clustering round their names the

facts which, gathered from accurate observation and intelligent, thoughtful experience, constitute the foundation of medical science and practice. Millenniums before our age these leaders "blazed the way" for scientific medicine, not only through the dense ignorance of primitive civilizations that long since have been submerged on the shore of an eternity that is past, but also through the wanton ennui of the highest stages of civilization in Babylon, Assyria, Egypt, Greece, and Rome. We can see, much more clearly in the history of ancient Greece than in that of any other nation, the inestimable value of leadership in medicine. Whatever these leaders touched in medicine, "intellectually or incorporated from without, they improved, purified, elevated and refined." "Accordingly, no people of history has exercised so controlling an influence upon the formation of all succeeding humanity—and with it upon the medicine of all civilized people—as the ancient Greeks" (Baas). In that "galaxy of immortals" composed of Phidias in art, Demosthenes in oratory, Socrates, Plato and Aristotle in philosophy, Sophocles in the drama, Themistocles, Miltiades and Pericles in statesmanship and war, we find the name of Hippocrates, who, in the greatness and beneficence of his work, worthily filled a high place in an intellectual group; the graciousness, sublimity and comprehensiveness of whose spirit, if ever equalled, has certainly never been surpassed in the world's history. Hippocrates introduced scientific methods in medicine. In his day, perhaps more so than in ours, medicine was burdened with pseudo-scientific speculations, e.g., "Health consists in a uniform, disease in an irregular, action and reaction of yellow bile, blood, mucus, and black bile upon and between each other. The pneuma, which, in the form of air, circulates in the vessels, is, however, also necessary for the maintenance of health." Hippocrates' title to leadership in medicine rests on the fact that, although he was profoundly influenced by the philosophic, psychological, and religious dogmas of the age, he preserved sufficient intellectual independence to observe the phenomena of disease from his own standpoint. Much that he taught was found to be untenable in the clearer light of succeeding ages, but the methods he adopted and the principles he inculcated have stood the "storm and stress" of all the centuries since his day. Hippocrates will always occupy a foremost place in the "honor roll" of the world's greatest leaders. If the writer be permitted, he would like to make a short digression here to call the attention of that large class of medical men who utterly fail to place even a rational emphasis on the value of literary culture in medicine to the fact that in the broadest based literary culture Hippocrates was unsurpassed by any writer of his age, "the golden age of Grecian literature." *His comprehensive literary culture was of inestimable value to him, as such culture is to every medical man, in the scientific and practical pursuit of medicine.*

In the mediæval medical age (400 to 1500) conditions were such that individual leadership could scarcely be evolved. The combination of priest and physician in one person practically submerged medicine under religious dogmas. In isolated cases of illness, as in the devastating plague, the first appeal was to religious incantations, for was it not God's displeasure at sin that caused sickness rather than insanitary environments? But upon the darkness of the abyss into which medicine fell in the mediæval ages, here and there shone the radiance of a star, dispelling the gloom. The labors of Aëtius, Alexander, Mondino de Luzzi, and the teachings of the great universities of Salerno, Padua, Bologna, Florence and many others did much to reclaim scientific medicine from the superstitions that were so debasing to it. Here again, as in the time of Hippocrates, medicine became more than deeply indebted to a few dauntless leaders. Some of these, undeterred by civil and religious edicts, dissected the human body and placed anatomy on a true foundation. The functions of the different organs and tissues were ascertained by experiments and vivisections and the action of drugs established from clinical records. This sturdy leadership during the closing centuries of the middle ages paved the way for the rapid evolution of modern medicine. Hospitals were erected, instruments of precision and great power, *e.g.*, the microscope, were invented, the advent of printing—all these were most potent contributory factors in the dissemination of scientific knowledge.

In no other period in the history of medicine have the brilliant results of leadership been more manifest than in the last four centuries. It is only necessary to mention a few names to recall practically every distinctive phase in the advancement of medical science. What is there in medicine that the following names do not portray? Rabelais, Vesalius, Linacre, Paré, Harvey, Sir Thomas Browne, Hunter, Cooper, Galvani, McDowell, Abercrombie, Abernethy, Beaumont, Bright, Graves, Rokitsansky, Trousseau, Paget, McCormac, Charcot, Emmett, Hutchinson, Morgagni, Murchison, Niemeyer, Dalton, Nothnagel, Mott, Morton, Metschnikoff, Lister, Billroth, Virchow, Pasteur, Wells, Simpson, Politzer, Playfair, Sims, Sayre, Roosa, McKenzie, Semmelweiss, Gross, Osler.

LEADERSHIP IN ONTARIO.

Pioneer life, for many reasons, is not conducive to high scientific attainments in medicine. It is, therefore, no reflection on the pioneer physicians of Ontario if they have not left the record of some great scientific discoveries. They made good their title to leadership in another field, *viz.*, that of medical legislation. In the early decades of the past century, blatant, ignorant quackery was rampant everywhere. It took courage, tact, and unwearying perseverance to overcome the difficulties

in the way of getting medical legislation to protect licensed practitioners. An Act came into force on November 27th, 1818, constituting a Medical Board. On January 4th, 1819, the Board was convened at York, now Toronto. The members of this Board were James Macaulay, Christopher Widmer, William Lyons, and Grant Powell. This band of splendid men worked laboriously to rid the Province of quackery and to secure legislation in the interests of medical education. Difficulties that seemed almost insuperable had to be overcome, and exasperating delays, patiently endured in the effort to get a higher standard of education. Steps were taken to establish a medical faculty in connection with what was then known as King's College. On this faculty between the years 1843-49 appear the following notable names: Gwynne, King, Beaumont, Herrick, Nicol, Sullivan, O'Brien, Boys, Hodder, and our own noble old nestor, J. H. Richardson.

The medical faculty of King's College met an untimely death. After its demise medical schools sprang up, flourished for a quarter of a century or more, and then merged into the present medical faculty of the University. The College of Physicians and Surgeons was established about 1867. Of the deceased members of our profession who were recognized leaders in these educational movements, Drs. H. H. Wright, W. T. Aikins, Fulton and J. E. Graham were the best known. The deeds of these pioneers may not dazzle us as do those of a Harvey or a Lister, but their courage, industry and high ideals justly entitle them to an honorable place in medical leadership.

FUTURE LEADERSHIP.

If medical history teaches one thing more than another, it is this fact, viz., that physicians have always been profoundly influenced by their environments. During the last fifty years, and most pronouncedly during the last twenty-five years, materialism has completely overshadowed idealism. In the Church much more interest is taken in the well-filled envelope than in the well-thumbed Bible. In the courts of justice the lawyer who can keep the "big trusts" "off the rocks" has all the eminence. That all idealism in medicine has been submerged by materialism, we have only to notice the strenuous efforts that physicians make to keep pace with the social "four hundred." Money is lavished on expensive homes and equipages, while intellects are starved for want of time to study and to travel.

To mention the name of any one as a possible claimant for leadership in church, law or medicine would only invite a storm of ridicule. However, there seems to be a "rift in the cloud." Materialism, especially in its grosser forms, is becoming synonymous with graft, and therefore

losing some of its halo. It may be too late for the elder portion, at least, of the present generation of physicians to recover lost ground, but there never was a more propitious time for young men to press forward and occupy the regal thrones of medical leadership. Opportunities for acquiring broad literary and scientific culture are at hand, and the facilities for travelling and studying abroad are all that could be desired. The greatest need of our University Faculty of Medicine is leadership. It may be that conditions will always be such that the majority of the chairs will have to be filled by the average man, but to have only the average man in all the chairs is a condition that we, as medical men, cannot look upon with either satisfaction or inspiration. It is "up to" some of our younger men to press forward and relieve the situation.

SOME SYPHILITIC AFFECTIONS OF THE EYE AND EAR.

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SYPHILIS is a cause of many eye diseases. There is no part of the eye which may not be invaded by it; even the lens is affected indirectly by interference with its nutrition; but it seldom causes complete blindness. Cohn, among 20,000 patients, found 1.15 per cent. of syphilitic eye disease, and Coccius 1.16 per cent. in his clinics.

Chancre of the eye is occasionally met with. It usually sits *à cheval* on the margin of the lid, partly on the skin and partly on the conjunctiva. It presents, when fully developed, the usual appearance of the Hunterian chancre, though during the early stage it is difficult of diagnosis. The retrochlear lymphatic glands become enlarged and indurated, constitutional symptoms manifesting themselves in due course. The last case I had under observation was that of an unfortunate young intern who had marginal blepharitis, and who infected himself while attending an obstetric case. There is a legend that digital and accidental syphilis is more severe than the ordinary variety, but the statement lacks confirmation.

During the secondary period mucous patches are sometimes observed on the conjunctiva, and during the tertiary period ulcerations of the eyelids have been observed.

It is the iris, however, which is the most common seat of ocular syphilis. It is attacked in 4 per cent. of all cases (Juler), and from 30 to 60 per cent. of iritis is due to syphilis (Webster Fox). The secondary stage is the time when it usually manifests itself, and during the first six months after infection. It may occur as early as the sixth week, or appear as a late tertiary symptom. Hutchinson states that after the sixth month

the liability to iritis diminishes rapidly. The inflammation is plastic in character, and attended by free exudation during the secondary stage, but later iritis is attended by one or more gummata. I have seen the anterior chamber so filled with gummata that a diagnosis of keratitis was made. It is a peculiarity of syphilitic iritis that it is attended by little or no pain, although there are exceptions to the rule, the patient, when only one eye is affected, often being able to pursue his occupation. The signs of iritis are: Cloudy, aqueous, change in color of the iris, loss of luster of the iris, iritic zone of congestion, contraction of the pupil. The symptoms are: Dimness of vision, lachrymation, photophobia and more or less pain. The duration, under favorable circumstances, is from four to six weeks. The prognosis is favorable under suitable treatment, although iritic adhesions are of frequent occurrence. Gummata will dissolve and disappear under mercurialization, though I have seen them suppurate, with consequent loss of the eye.

The treatment consists of the free exhibition of mercury. Iodide of potash is of no use in this stage of the disease. The best form of administration of mercury I have found to be by inunction, one drachm rubbed in twice a day, into the inner sides of arms and thighs alternately. Locally atropine is the main standby, four grains to the ounce, three times a day, a drop to be instilled into the conjunctival sac. If the eye does not improve quickly, two or three leeches should be applied to the temple and the resulting wounds encouraged to bleed for an hour or two, after which one drop of a solution of atropine, sixteen grains to the ounce of water, should be instilled. If repeated once a day for two or three days, this usually gives relief. The subconjunctival injection of cyanide of salicylate of mercury, with acoin, is most useful in subacute cases or cases resisting other treatment.

Keratitis sometimes occurs in acquired syphilis, though this is disputed by some. The interstitial keratitis of acquired syphilis is beyond dispute. It usually manifests itself under the latter conditions, about the period of puberty, and is characterized by progressive ground-glass opacity of the cornea, beginning in the center and extending slowly in the periphery. Both eyes are usually affected. There is some photophobia, lachrymation and pain, but the symptoms are not usually acute. It is usually accompanied by iritis, and presents the iritic zone of congestion. The duration is from nine to twelve months. The prognosis should be guarded, as permanent impairment of vision, short of blindness, follows in most cases. Occasionally the cornea clears up entirely, but the sight remains impaired by accompanying choroiditis.

Choroiditis and rhinitis are late secondary or early tertiary symptoms. They present little or no external congestion of the eye, some photophobia, progressive deterioration of vision, which the patient describes as

smoky. With the ophthalmoscope a fine haze may be seen, but usually no large floating opacities in the vitreous. I consider this fine haze as pathognomonic of syphilitic retino-choroiditis. I have never seen a case of syphilitic retinitis without choroidal involvement and I doubt its existence. Later on pigment changes and atrophic spots appear in the choroid. The prognosis is favorable to the extent that blindness rarely follows, but some defect in the vision is sure to occur. The treatment is the exhibition of mercury, by inunction, by mercurial baths or by administration by the mouth. Locally the subconjunctival injection of cyanide of mercury, atropine, leeches to the temple and rest of the eyes favor a cure.

Atrophy of the optic nerve is occasionally the result of syphilis more commonly in connection with locomotor ataxia.

The paralytic affections of the ocular muscles are frequently of syphilitic origin. The most common form is a temporary paresis of the iris and muscle of accommodation, which comes on quite suddenly, and passes off gradually. After several attacks, paralysis of the external eye muscles frequently occurs, those supplied by the third nerve being especially involved. These paralytic affections occur from fifteen to twenty years after infection, mostly in cases in which the secondary symptoms have been slight or indefinite. Complete ophthalmoplegia may occur. After one or two attacks the paralysis becomes permanent.

Syphilitic affections of the ear are not common. When they occur, they take the form of an obstinate exudative or plastic inflammation of the middle ear, which is very obstinate and intractable, and always attended by some loss of hearing, which is permanent. It is mostly met with in hereditary syphilis.

Affections of the cochlea and semi-circular canals occur occasionally. The cases I have met with come on suddenly with the symptoms of Meniere's disease. I am not prepared to say whether they were Meniere's disease in a syphilitic subject, or syphilitic disease of the internal ear presenting Meniere's symptoms. Anyway, there was improvement under anti-syphilitic treatment.

66 College Street.

NOTES FROM THE ROYAL ALEXANDER HOSPITAL, FERGUS.

By A. GROVES, M.D.

THYROIDECTOMY.

WITHIN a short time I have become aware of two deaths from suffocation caused by large goitres, and the fact that such a termination is possible appears to furnish ample ground for urging that operative

measures should be undertaken in most if not in all cases when other forms of treatment have failed. In this note I do not intend to refer to exophthalmic goitre where I think an operation should almost always be done, but shall confine my observations to cases of simple goitre. There is perhaps no disease in which the advice to let it alone is oftener given, and I think that advice is a mistake in a large majority of cases. The error is, as so often is the case in surgical affections, in putting off doing anything until complications arise or the state of the patient has become such that any operation is exceedingly hazardous. There is indeed a sort of moral cowardice which causes men to shrink from advising radical treatment lest if the patient should not do well the practitioner who advised the operation might be blamed. Such a condition of mind on the part of the physician, whilst utterly indefensible, is not wholly to be wondered at, for the public will hold blameless the man who allowed twenty cases of goitre to die while he looked on and did nothing, not knowing there was anything to do or any mistake to forgive, while on the other hand there will be nothing but words of condemnation for him who, having operated on twenty similar cases, had nineteen recoveries with one death. For that death he is blamed, and the fact that he saved nineteen who otherwise would have died is forgotten.

The important thing is early operation, for if all goitres were removed before they attained any great size there should ordinarily be no death rate. The two dangers, hæmorrhage and sepsis, ought to be preventable—indeed there should be no great loss of blood in simple cases during the operation. I have never seen a case where the loss of blood was at all serious or alarming. The avoidance of sepsis is entirely a matter of careful attention to every detail before and at the time of operation. The transverse incision is the best to employ, because it gives ample room and leaves only a slight scar. In removing a thyroid, as in all operations, it is important to make incisions sufficiently extensive to give ample room without dragging the edges of the wound apart. A great many of the difficulties of the operation come from too small an incision and especially is this true of hæmorrhage. With plenty of room a bleeding vessel can be at once seized and ligated, but blood welling up from a deep and narrow incision is most difficult to arrest. As far as possible, every vessel should be tied at two points before cutting, and then cut between. To avoid the recurrent laryngeal nerve, it is only necessary to keep close to the gland. After the removal of the gland it is most important to see that there is no oozing from the wound, and for ligatures there is nothing better than silk. It is well when there is a large raw surface to leave in a drainage tube for twenty-four hours, as a considerable quantity of bloody serum may collect and prevent union of the walls. Tissues which have been cut through should be brought together by sutures, the anatomical

relations of parts in this, as in all operations, being restored as nearly as possible to what they were before operation. For skin sutures horse-hair is an almost ideal material.

When I stated above that there should be no death rate I followed the opinion of Kocher, whose experience is unrivalled, and who makes this statement: "We can with perfect truth say that danger to life need no longer be anticipated." In view of such an opinion, it would appear that he who does not advise an operation in a case of goitre assumes a grave responsibility. Out of twenty-one operations I have had no death which could by any fair inference be laid to the operation. In one case on the third day after operation the patient developed a most severe type of scarlet fever, having come from a town in which the disease was prevalent. At the end of the week she died, but the wound was quite healed and at no time were there any symptoms indicating anything wrong in so far as the removal of the gland was concerned. Two medical men who saw the case agreed that the cause of death was the scarlet fever, and that the operation had nothing whatever to do with it.

As to the question of anæsthetics in these operations, there is a good deal of difference of opinion and practice, many using local anæsthesia entirely, others general anæsthesia, and some combining both methods. I think no hard and fast rule can be laid down. An operator who is familiar with the methods of producing local anæsthesia is able to use it when one not accustomed to its use ought to have a general anæsthetic administered. Again, nervous, excitable patients who have little fortitude generally require a general anæsthetic. The question then as to what form of anæsthesia should be used ought to be considered from the standpoint of the experience of the operator on the one hand and of the peculiarities of the patient on the other.

NOTE ON THE PREPARATION OF CATGUT FOR SURGICAL PURPOSES.*

By LORD LISTER, F.R.S.

CATGUT used for ligatures or sutures in surgery should fulfil various conditions. It should, after soaking in water or blood serum, be strong enough to bear any strain to which it may be subjected, and should hold perfectly when tied in a reef knot. It must not be so rigid as it lies among the tissues as to have any chance of working its way out by mechanical irritation. Nor should it be too quickly absorbed, but should be consumed so slowly by the cells of the new tissue that grows

* *British Medical Journal*, January 18th.

at its expense that, in case of the ligature of an arterial trunk in its continuity, it may serve sufficiently long as a support for the substitute living thread in its embryonic condition. At the same time, it is essential that the catgut be securely aseptic when applied.

Of the various substances which I have tried for the preparation of catgut, that which has, with one exception, most nearly approached the ideal is sulphate of chromium. The one exception is secure asepsis of the gut substance, this salt being utterly untrustworthy as a germicide; this defect is easily remedied by the addition of a little corrosive sublimate, the powerful germicidal action of which is not prevented by the chromium sulphate.

I was at one time discouraged from using chromium sulphate by finding that it varied extremely in quality according to the manufacturer who supplied it. Thus one sample got from a well known firm proved quite insoluble in water.† But a perfectly satisfactory result was obtained by adding solution of sulphurous acid (P.B.) to solution of chromic acid until the rich orange-brown of the latter has passed through grass-green to the pure blue of chromium sulphate. When this has occurred no more should be added, since free sulphurous acid produces a precipitate with bichloride of mercury, and would thus, in proportion to its amount, withdraw the germicide from solution when the two liquids are mixed. In order to make quite sure that no free sulphurous acid is present, it is well to keep a few drops of the chromic acid liquid in reserve, and add them when the blue color has appeared, so as to restore the green tint.

Another point that requires attention arises from the fact that the P.B. solution of sulphurous acid, as obtained from the chemist, is generally somewhat deficient in the amount of SO_2 , in consequence of loss by volatilization. Hence it is necessary to use a smaller quantity of water for dissolving the chromic acid than would otherwise be used; and when the proper tint has been got, add enough distilled water to bring the liquid to the requisite measure.

The following directions for preparing what is known as chromic (or sometimes sulpho-chromic) catgut in accordance with the above conditions were given to manufacturing chemists in 1894, but have never yet been published:

“The preparing liquid must be twenty times the weight of the catgut. So for 40 grains of catgut 800 grains of preparing liquid are required. It is made by mixing two liquids—namely, the chromium sulphate liquid and the sublimate liquid.

† I learn from Messrs. Morson (of Elm Street, Gray's Inn Road), who have devoted a great deal of attention to this salt, that its most suitable form requires very great care in its preparation in order to avoid variation in its composition, and also that it is extremely hygroscopic, so that unless it is very carefully preserved, water in variable amount becomes associated with it, another cause of uncertainty in its composition.

“The sublimate liquid is :

Corrosive sublimate	2 grains
Distilled water	320 “

“The sublimate may be dissolved by heat, but the solution must be used cold.

“The chromium sulphate liquid is prepared thus :

Chromic acid	4 grains
Distilled water	240 “

“Add to this as much sulphurous acid (P.B. solution) as gives a green color. If more is added the color becomes blue, which shows that rather too much sulphurous acid has been used. It is well to reserve a few drops of the chromic acid solution, to be added after the blue color has just appeared and restore it to green. Then enough distilled water is added to bring the green liquid up to 480 grains. Then add the sublimate liquid.”

The catgut is kept twenty-four hours in the preparing liquid, and is then dried on the stretch.

N.B.—It is essential that the CrO_3 and SO_2 solutions be mixed before the HgCl_2 solution is added.

Catgut prepared in this way remains actively antiseptic in its substance for an indefinite period, as was shown by the following experiment :

Some slender hanks prepared three years previously, weighing 207 grains, chopped into short segments, were placed in a small mortar and treated with enough distilled water to cover them, 2,000 grains being required for the purpose. The gut was then pressed firmly with a pestle, and the same was afterwards done three times at intervals of about three hours. The gut and water were then transferred to a stoppered bottle for seventeen hours, when the liquid was poured off and filtered, being clear and almost colorless.

The germicidal property of the infusion was carefully tested by the late Dr. Allan Macfadyen. In spite of the large amount of water used in preparing it, he found that it destroyed the *Streptococcus pyogenes* in a quarter of an hour. When diminished to half its bulk by evaporation *in vacuo* it killed *Staphylococcus pyogenes aureus* in half an hour; and when further reduced by one-half it deprived the resisting spores of anthrax of vitality in two hours, although the amount of the liquid was still about twice that of the catgut to which it was applied.

The following is Dr. Macfadyen's account of these experiments :

Liquid Tested.

Infusion of chromic catgut = 100 c.cm.

Organisms Used.

Bacillus anthracis, sporing potato culture.
 Staphylococcus pyogenes aureus, laboratory stock culture.
 Streptococcus pyogenes, virulent culture.

Methods.

Threads were soaked in emulsions of the above organisms and exposed to the action of the above liquids for varying periods of time—fifteen minutes to two hours. The threads were then washed in (1) sulphide of ammonium, (2) distilled water (sterile), and placed on sloping agar and glycerine agar at blood heat for seventy-two hours.

RESULTS.

Liquid Unconcentrated.

Time.	$\frac{1}{4}$ Hour.	$\frac{1}{2}$ Hour.	1 Hour.	2 Hours.
Anthrax spores	—	—	—	—
Staphylococcus pyogenes aureus..	—	—	+ poor	+ slight
Streptococcus pyogenes	o	o	o	
Controls	—	—	—	—

Liquid Reduced to Half its Bulk.

Time.	$\frac{1}{4}$ Hour.	$\frac{1}{2}$ Hour.	1 Hour.	2 Hours.
Anthrax spores	—	—	—	o
Staphylococcus pyogenes aureus..	?	o	o	
Streptococcus pyogenes	o	o	o	o
Controls	—	—	—	—

Liquid Reduced to Quarter Bulk.

Time.	$\frac{1}{4}$ Hour.	$\frac{1}{2}$ Hour.	1 Hour.	2 Hours.
Anthrax spores	—	—	o	o
Staphylococcus pyogenes aureus..	o	o	o	o
Streptococcus pyogenes	o	o	o	o

But while the substance of the catgut is thus not only aseptic, but powerfully antiseptic, its dry surface is liable to contamination by contact with septic material, and it is essential that, before being used, it be washed with some trustworthy germicidal liquid.

My practice has been to put the catgut, like the instruments, in 1 to 20 solution of carbolic acid about a quarter of an hour before the operation is begun. Any of the catgut that remains unused upon the reel may be afterwards kept in a similar solution for any length of time without disadvantage.

The essential precaution of purifying the surface of the catgut is, I fear, sometimes overlooked, the result being occasional suppuration attributed to defect in the ligature, while it is really the fault of the surgeon.

PROVINCE OF QUEBEC NEWS.

Conducted by MALCOLM MACKAY, B.A., M.D., Windsor Mills, Quebec.

At the annual meeting of the Board of Governors of the Royal Victoria Hospital the following appointments were made :

Associates in Medicine—Dr. Cushing, general medicine ; Dr. McCrae, general medicine ; Dr. Fry, general medicine and pediatrics ; Dr. Burnett, dermatology ; Dr. Russell, neurology ; Dr. Robins, neurology.

Associate in Gynæcology—Dr. Goodall.

Associate in Ophthalmology—Dr. Tooke.

Assistant Pathologist—Dr. Klotz.

Registrar in Pathology—Dr. McCrae.

Assistant in Bacteriology—Dr. Rankin.

Clinical Assistants in Medicine—Drs. McAuley, Francis, McKechnie.

Clinical Assistant in Surgery—Dr. Nelson.

Clinical Assistant in Otology—Dr. H. White.

Registrar—Dr. Cushing.

Assistant Registrar—Dr. McAuley.

The report of the Superintendent, Mr. H. E. Webster, for the year ending December 31, 1907, was as follows :

The number of patients admitted during the year was 3,398, a decrease of 46 from the previous year.

There were 1,994 Protestants, 1,071 Roman Catholics, 290 Hebrews, and 43 of other faiths ; 1,656 were free patients, 1,280 public ward patients, paying fifty cents and one dollar per day, and 462 private ward patients ; 2,473 were residents of Montreal, and 925 came from districts outside of the city.

The total days of hospital treatment aggregated 81,902, as against 73,993 during the previous year, an increase of 7,909 days.

The death rate for the year was 6.81 per cent., or if those dying within 48 hours after admission be deducted, 4.58 per cent.

In the out-patient department the total number of patients treated was 4,156 ; the number of visits of those patients aggregated 27,399—medical 9,379, surgical 8,311, eye 3,505, nose, throat and ear 4,758, diseases of women 1,446.

The income for the year was \$168,381.04, while the ordinary expenditure amounted to \$146,610.09 ; the balance of \$21,770.95 being applied to the reduction of the indebtedness incurred by the new buildings and additions.

Since the last report the work of reconstruction and fire-proofing has been steadily continued, and the only building remaining which is not

fireproof contains the pathological and research laboratories, now separated from the east wing by a direct fire wall of solid brick and fire door.

Wards have been opened in the centre building, which have greatly added to the comfort of the patients, relieving the rooms off the public wards and allowing them to be used only for patients in a serious or dying condition.

A new pump for the elevators has been installed and if necessary this pump may be attached to the fire standpipes of the hospital, providing a stream far more powerful than that supplied by the city mains. In addition the Governors have entered into a contract for an artesian well to supplement the city water supply.

The whole report showed a progress in every department very satisfactory to the Governors and friends.

At the annual meeting of the Corporation and Governors of the Western Hospital, the Secretary, Dr. Ross, reported that the year had been the most eventful in the history of the hospital. The new building had been opened and the old one converted into a nurses' home. Only six of the forty-two original charter members survived to see the progress of the work begun thirty-five years ago.

Although for several months this year the medical work had been in abeyance, the patients numbered one hundred more than in the previous year, and outdoor consultations increased by over five hundred. The financial statement showed that the receipts for the year had been \$20,184 and the disbursements had amounted to \$319 less.

The medical report showed that there had been 772 admissions during the year. The death rate had been 5.9, or excluding deaths within 48 hours of admission, 4.2.

Nine nurses had graduated and 25 had been admitted.

At the Montreal Medical Society the Council reported as follows :

(1) In the opinion of the Council it would be advisable that the meeting of the Canadian Medical Association be held during the week beginning June 14th.

(2) The Council recommends that the Society take up the question of the city's water supply, suggested in a communication from Dr. Armstrong, and that a committee be appointed to acquire information on the subject and report later to the Society.

(3) The Council recommend that the books at present in the library be handed over to the McGill Medical Library, and that no further monies be expended for current medical journals, but that members be invited to contribute journals to the Society's reading room.

The meeting was in this case devoted to pathological work, and the following specimens were shown :

Dr. Adami—Giant-celled tumor in a trout.

Dr. Gardner—Dermoid ovarian tumor communicating with the rectum.

Dr. Martin—Sarcoma involving heart.

Dr. Campbell—Bilharziosis.

Dr. McKee—The cultural features of a new organism of the conjunctiva.

Dr. Abbott—Congenital heart disease.

Dr. McCrae—Congenital absence of genito-urinary system of left side.

Dr. Tooke—Hypopion iritis associated with epidemic cerebrospinal meningitis.

Dr. Archibald—The effect of foreign bodies on the peritoneum.

Dr. Duval—Melano sarcoma of common bile duct.

Dr. Von Eberts—Tuberculoma of tongue.

Dr. Klotz—(a) Trypanosomes in Montreal rats; (b) Experimental work—Arteriosclerosis.

Dr. J. Whittridge Williams, of Johns Hopkins University, was the guest of the Montreal Medico-Chirurgical Society early in February. There was a dinner given in his honor at the St. James' Club on February 6th, and on the 7th he delivered a paper on "The Clinical Significance of Glycosuria in Pregnancy."

Mr. Jules Bartly, osteologist at McGill, died two weeks ago. He was a superior teacher and had trained many good anatomists. He served in the Crimean war. He studied natural history in Philadelphia and became a noted authority. He had a number of medals for his service in the Crimean war.

The annual dinner of the District of St. Francis Medical Society was held on February 12th, and proved to be a most successful function. Sherbrooke was again chosen as being the most central location, and the medical men of the surrounding district turned out in full force. Dr. Adami and Dr. Martin of McGill University were the guests of the evening, representing their faculty. The only thing that marred the success of the banquet was the absence of the representatives of Laval University. At the last moment telegrams of regret were received from both of them and in consequence no substitutes could be appointed.

Dr. Ledoux, President of the Society, occupied the chair and performed his part in a particularly pleasing manner. The toast list was a long one and the speeches bright and happy.

In replying to the health of McGill, Dr. Adami referred to the great work that was being carried on in all the departments of the University, not only the medical school, but the faculties of Arts and Science were spreading their influence over the Province by offering practical training

in agriculture, engineering, and military work, to mention but a few of the branches which were attracting attention. He thought that there was some misunderstanding in the townships in regard to the view which the University held in respect to educational matters, and he thought that the University and people should be brought more into accord by complete and clear explanations instead of beating around the bush and making much out of small differences. He regretted that there was so little connection between graduates and the Faculty of Medicine at McGill. He wished that there could be more intimate relationship shown; he wished that the University knew its sons by name, as it were, and be able to say what each one was doing in his own private capacity. He felt that when a graduate returned to the college he found the professoriate so engrossed with their work that a kindly shake of the hand and a few words were all that passed. He should like to see much more interest taken in these visitors. He hoped soon to see, with the appointment of the new dean, a young man who could spend his whole time in the college building and devote his time to this kind of work—a man to whom students might come for advice and be sure of getting the best possible. Further, he hoped that reunions of the students might take place from time to time at the old college and draw closer the bonds which united all.

Dr. Martin followed in much the same strain, and hoped that the event was not far distant. He envied the St. Francis Medical Society chiefly on account of its unity. To see French and English working together in accord was to him a marvellous thing. It had been attempted in Montreal without success. He knew not where the fault lay, but it was probably on both sides. It was earnestly desired by a number of both classes but it seemed to be but an idle dream. Before him he saw evidence that such an amalgamation could take place, and could stand and exist for years at a time, and it was inspiring to see it. He hoped to take this inspiration back to Montreal with him.

Dr. Bachand, Mayor of Sherbrooke, replied to the toast to that city in an eloquent speech, welcoming the members of the Society and showing forth the great progress that had been made in the last few years. He also indicated that there was an expectation of a great increase in the business part of the city this year, as several large concerns had intimated their intention of settling there.

Dr. Hayes, of Richmond, toasted the medical profession in a neat, witty, and apt speech, and was replied to by Dr. Colby of Stanstead.

The musical part of the programme was furnished by a quintette of most excellent voices which delighted all by appropriate music. In addition there were several solos and choruses by other musical members of the profession.

The banquet did not break up until two in the morning—good evidence of the manner in which it was enjoyed by those whose privilege it was to be present. These functions bid fair to become a permanent institution and are looked forward to with great interest by the busy practitioners of Sherbrooke and the vicinity.

Dr. Robert King, of Montreal, has been appointed to succeed Dr. E. J. Turnbull, who resigned.

Dr. James Douglas, of New York, has presented a farm adjoining the Verdun Protestant Asylum for the Insane for Quebec, to that institution. It is worth \$42,000.

Dr. Jean Philippe Rottot, who has been for many years connected with the medical faculty of Laval, Montreal, has just retired from the Deanship. Dr. Rottot was born at l'Assomption in 1825. He always took a deep interest in the affairs of Laval University, and the authorities part with his services with feelings of much regret. He graduated from the College of Medicine and Surgery of the Province of Quebec in 1847. His professional life has been one of marked distinction, and one that has shed lustre on his chosen calling.

Dr. E. P. Lachapelle has been chosen to fill the position of Dean of the Medical Faculty of Laval, made vacant by the retirement of Dr. Rottot. Dr. Lachapelle has done much for the profession in Montreal and Quebec. He will fill the position with ability.

Montreal is to have its University Club. It is expected the club will be in operation by 1st May. The object of the club is to bring all University men in touch with each other, regardless of the University from which they graduated.

Hull has had a serious time of it owing to typhoid fever. Efforts have been made to clean out the water mains and secure pure water. These efforts have not been, as yet, attended with complete success.

PRINCE EDWARD COUNTY MEDICAL MEN INCREASE RATES.

As the result of a meeting of the local medical men with Dr. McCall, of Belleville, the district representative of the Ontario Medical Council, Prince Edward Medical Men have adopted an increase in the rates charged of late.

It is claimed that the fees have been lower than those charged twenty-five years ago, though the cost of living has advanced and the cost of medical equipment has been doubled.

CURRENT MEDICAL LITERATURE

MEDICINE.

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

TYPHOID CARRIERS.

In the *British Medical Journal*, Jan. 4th, A. Ledingham and J. C. G. Ledingham have an article on "Chronic Typhoid Carriers." After giving the history of the subject to date, mostly from German sources, they describe the cases they have met with in a Scotch lunatic asylum. It is usually in such institutions that these cases are met with, partly on account of the aggregation of a considerable number of persons, partly on account of the more or less dirty habits of the inmates, but the lessons to be learned are quite applicable to other conditions. This asylum, containing 93 male and 53 female patients, with a separate building containing 32 patients, has been subject since 1893 to successive small outbreaks of typhoid. Similar outbreaks have taken place in a smaller detached building situated a short distance from the main one and containing 32 females. Thirty-one cases in all have occurred, 24 female, including 4 cases among the attendant staff; 9 cases, or 29 per cent., fatal. They have occurred at no special time of the year, but in any one year the cases have followed one another with a good deal of rapidity. Repeated and exhaustive examinations of the ordinary sources of infection were made without giving a clue to the cause, and in the absence of any such the possibility of the presence of a source of infection among the inmates was thought of, and the investigation along these lines undertaken. As the majority of the cases had been among the females these were first examined. Specimens of the *fæces* were collected in sterile bottles. From each two loops were taken and emulsified in two broth tubes. Two plates of bile salt lactose-neutral-red agar were spread with the loopful from each tube, four plates thus being prepared from each sample. On the following day the colorless colonies were picked off and inoculated in mannite-peptone water. If gas production occurred (as in the majority of cases) no further consideration was given. Where acid production only took place a further series of sugar tubes were inoculated (glucose, lactose, cane sugar and dulcine), also litmus, milk, and gelatine. Indol was tested for by Ehrlich's method and agglutination tests were made with an anti-typhoid horse serum, also with serum from positive cases of typhoid fever.

From the main asylum 7 samples of *fæces* were examined. One patient, "G.," was found to be passing typhoid bacilli in enormous quan-

tities in the fæces. She had been in the asylum since 1896, was 35 years of age, and there was no record that she had ever had typhoid fever. Her habits were filthy, but she had never been employed in laundry or kitchen. She was isolated on September 24th and treated with anti-septics. On October 12th samples of urine and fæces were found free from the typhoid bacilli, but on October 21st and on November 29th they were again found in the fæces, the urine remaining free.

With the isolation of "G." it was hoped that no more cases would appear, but toward the end of October a case occurred in the small asylum and the fæces of all the patients (female) were examined. In this way another carrier was brought to light, "M. C.," aged 60, who had typhoid in 1895, and has been continuously in the small asylum since that time. Her habits are cleanly; she has never been employed in the kitchen, but has occasionally been employed in the laundry.

A re-examination of those females in both buildings who had recently had the fever was made and another carrier discovered. "C.," aged 30, had typhoid in 1904; she is not of dirty habits, and has never been employed in laundry or kitchen. In all cases (three) the blood gave the characteristic test.

Apart from isolation, treatment is probably without effect, and the work of other observers would indicate that the bacilli come from the gall bladder, where they live as saprophytes.

EXAMINATION OF THE FÆCES.

Dr. George H. Jones, of Toledo, discusses (*St. Louis Medical Review*, Dec., 1907) the examination of fæces in a most intelligent manner. In all gastrointestinal disorders of any severity at all, he says it should be the routine practice to examine the stools with the naked eye and with the microscope. Chemical tests for blood and for other substances may also be of advantage. The examination consists of observing (1) the form and consistence; (2) the color; (3) the odor and quality; (4) abnormal ingredients, such as mucus, pus, blood, parasites, and concretions. A stool sieve is essential when searching for gall stones, heads of tape worms, or intestinal parasites.

(1) Concerning the form and consistence, these may be altered by the rate of peristalsis, being hard when peristalsis is slow, or soft when it is very fast. The hard masses may become broken into scybala.

(2) Color. The normal stool usually is dark brown, but various foods have an influence on the color. Bismuth, iron, manganese, rhubarb, senna, santonin, kino, and hæmatoxyton are some of the drugs which

may change the color of the stools. Clay colored stools indicate a lack of bile formation or an obstruction of the bile flow, but they may result from an excess of fat or from a reduction of bilirubin to a simpler compound. Green stools may be due to a rapid sweeping out of the fresh bile, or to biliverdin, or to the presence of a color forming bacterium in the intestines. Black stools, if not due to drugs, are generally due to the presence of blood.

(3) Odor and quantity. Proteid decomposition is mainly responsible for the odor, and results when too much meat is eaten or when the proteids remain too long in the alimentary canal. The quantity is dependable upon the amount or kind of food taken. Vegetables have a high percentage of indigestible material. The bacteria form from one to two-thirds of the fæces. Inefficient digestion, rapid peristalsis, and diminished absorption are also responsible for an increased bulk of the stool.

(4) Abnormal ingredients. The most likely are mucus, pus, blood, parasites and concretions. The mucus should be observed to see whether it is well mixed with the fæces or whether it is separate and glistening. Its source can be more or less accurately ascertained in this way. The same is true of pus and blood. The round worm and the thread worm are often found in children. The sections of the beef tape worm and of the pork tape worm may be found in the stools of patients in this country. Biliary, pancreatic, and fæcal concretions may be found with the fæces. The most likely are the gall stones.

The microscopical examination of the fæces is carried out by bringing the fæcal masses to a fluid state by mixing with water or normal saline solutions. A few drops of formaldehyde solution will destroy any offensive odor. Heavy muscle and vegetable fibre settle readily to the bottom. Parasite eggs stay in the middle. Bacteria, fatty acid crystals and light cellulose materials, are in the upper layers. To find any of these, place drops of the material from the various levels on a slide and cover with a cover slip, and examine.

(5) The examination for amœbæ should be made from a perfectly fresh stool. The recognition of these organisms depends in a large measure on their amœboïd movement and this soon ceases when the stool begins to cool. The eggs of the *Ascaris lumbricoides* are oval, and are protected by a transparent shell, outside of which is an albuminous envelope. The eggs of the *Oxyuris vermicularis* are oval and have a chitinous shell. The eggs of the two tape worms common to this country, the *Tænia solium* and *Tænia saginata*, are indistinguishable; they are oval with a thin shell. The embryos of these may be seen. In a patient infected with *Uncinaria americana*, large quantities of eggs are found in the stools. They are elliptical with a transparent shell, and may be seg-

mented. Of the many micro-organisms found in the stools the tubercle bacilli are the most important. The technique for demonstrating these is the same as in the sputum.

(6) Red blood cells are usually destroyed by the intestinal secretions, and when found usually come from the lower bowel. White blood cells appear normally in the stools, but are increased in catarrhal conditions. Eosinophiles are found in the stools of persons suffering from intestinal worms of mucomembranous colitis. Epithelial cells are constantly present, but are usually very much digested. In inflammatory conditions they may be much increased, and may not be destroyed. Mucus without epithelial cells indicates an inflammatory process. Mucus appears as transparent, slightly striated masses. Certain crystalline elements, as triple phosphate calcium phosphate and calcium oxalate, may be found under conditions similar to those that occur in the urine. Fragments of intestinal tissue or of neoplasms may be sloughed off and excreted in the fæces. No close student of the manifestations of disease can afford to neglect this valuable means of investigating the secretions, absorptions, and motor functions of the stomach and intestines.

BLOOD PRESSURE STUDIES IN TYPHOID FEVER.

Joseph H. Barck, M.D., of Pittsburg, Pa. (*New York Medical Journal*, August 24, 1907), relates some very interesting experiments from which he concludes as follows:

(1) It has shown us that the blood pressure which falls from the normal after the patient has taken to bed, stays down until convalescence is established, and then returns toward the normal.

(2) That typhoid fever is a disease with a blood pressure below 100 mm. (accepting at present the Stanton instrument as a standard).

(3) That the blood pressure is governed by factors of its own, and bears no constant relation to pulse rate or temperature.

(4) That in diagnosis, blood pressure studies may be of value in differentiating this disease from others, after we know the behavior of other diseases in this respect. In the diagnosis of the complications it has a value.

(5) That in prognosis the blood pressure chart is of value; a steadily falling pressure means grave danger; so long as the blood pressure keeps up at a reasonable level, we may feel that there is reserve power to work with.

(6) That in the treatment of the disease the study of the blood pressure will probably be found to be of the greatest actual value. It may

teach us that the way to combat circulatory failure in typhoid fever is to increase peripheral resistance; or when to direct our efforts at the heart, and when at the blood vessels, when it is well to increase, and when it is well to diminish the amount of fluid in the vessels. Thus you see how fruitful has been the study of blood pressure in this disease. It explains numerous occurrences, giving us a deeper insight and broader view of the disease process. To the student of disease it is a wealth of knowledge which will lead to greater understanding of the pathological physiology and to better therapy of the disease.

DIET IN PULMONARY TUBERCULOSIS.

Herbert C. Clapp (*Med. Rec.*, June 29, 1907) states that the following dietary, subject to modifications, will convey some idea of how consumptives with good digestion should be fed, if under weight:

Breakfast, 7.30 a.m. Fruit, cereal, coffee, toast or muffins, one raw egg, two glasses of milk.

Lunch, 10 a.m. Two raw eggs, two glasses of milk, crackers.

Dinner, 12.30 p.m. Soup; rare roast beef, or lamb, mutton, chicken, turkey; steak, chops, sweet-breads, or raw chopped beef; potatoes, two vegetables chosen from among stewed tomatoes, corn, peas, beans, squash, spinach, beets, onions, turnips, asparagus, cauliflower, celery, etc.; salad; baked or stewed apples or a simple pudding, custard, corn-starch, farina, rice, junket, or bread pudding.

Lunch, 4 p.m. Two raw eggs, two glasses of milk, bread or cheese sandwich.

Supper, 6.30 p.m. Hot or cold meat, bread, milk-toast, fruit or sauce, tea, one raw egg, and two glasses of milk.

Lunch, 9 p.m. Two glasses of milk.

THE INFLUENCE OF ANTITOXIN UPON POST-DIPHTHERITIC PARALYSIS.

Drs. M. J. Rosenau and John Anderson (Bulletin No. 38, U. S. Public Health and Marine Hospital Service) conducted an important set of experiments in order to ascertain if post-diphtheritic paralysis can be controlled by injections of antitoxin. Their tests were made upon guinea pigs, and these results follow: "Post-diphtheritic paralysis in the guinea pig is an almost exact counterpart of the same sequel in man. We are, therefore, able to bring forward experimental evidence showing the effect

of antitoxin upon post-diphtheritic paralysis. In the guinea pig antitoxin cannot influence the diphtheritic paralysis after the paralysis has appeared. Antitoxin has no influence in preventing post-diphtheritic paralysis if injected shortly before the paralysis develops. Antitoxin given twenty-four hours after the infection can save the life of the guinea pig and greatly modify the paralysis. Antitoxin given in a single large dose forty-eight hours after the infection did not modify the paralysis or save life. Thus in our experiments 4,000 units failed to modify the paralysis or save the life of guinea pigs weighing about half a pound. Weight for weight, this corresponds to 400,000 units for a fifty-pound child. Antitoxin given in repeated injections beginning twenty-four or forty-eight hours following the infection seems to have a more favorable effect upon the subsequent paralysis than a single injection. A very small quantity (1 unit) of antitoxin given twenty-four hours before or at the time of infection in our experiments prevented the development of paralysis. In man we would expect more favorable results from the use of antitoxin than our work upon the guinea pig indicates, for we were dealing with an early and malignant form of experimental post-diphtheritic paralysis. This grave variety is, fortunately, rare in man. Further, we injected the entire charge of poison directly into the tissues of the guinea pig, while in man the toxin is doubtless elaborated more slowly. We may, therefore, assume that antitoxic serum, given at a somewhat later period than in our work upon the guinea pigs, would exert beneficial effects. The fact that one unit of antitoxin prevents paralysis and saves life when administered timely, whereas 4,000 units totally fails when delayed forty-eight hours, emphasizes the importance of using this sovereign remedy early."

SURGERY.

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

THE SURGERY OF THE URETER.

In the *St. Louis Medical Review*, Dec., 1907, B. Merrill Ricketts, writing on the above subject, quotes Fenger's conclusions on the operation for the relief of stricture of the ureter in hydronephrosis or pyonephrosis:

1. Exploration of the ureter as to its permeability should be done from the renal wound by a long flexible silver probe (a uterine probe) of an elastic bougie, either olive-pointed or not. If the bougie passes into the bladder, the examination is at an end. The size of bougie that will pass through a healthy ureter is from 9 to 12, French scale.

2. If the pelvic orifice of the ureter can not be found from the renal wound, it should be sought for by opening the pelvis, pyelotomy, or by incising the ureter, ureterotomy.

3. A longitudinal incision, half an inch to an inch long, in the posterior wall of the pelvis can be made while the kidney is lifted upward against the twelfth rib. This procedure is easy if the pelvis is dilated, but may be impossible if the pelvis is of normal size.

4. A stricture in the ureter, if not too extensive, can be treated by a plastic operation like the Heinecke-Mikulicz operation for stenosis of the pylorus; namely, longitudinal division of the stricture and transverse union of the longitudinal wound. This method of operating for ureteral stricture seems to me preferable to resection of the strictured part of the ureters (Kuester's operation) for the following reasons: It is a more economical operation and preferable when the elongation of the ureter is not sufficient to permit the two cut ends of the ureter, after excision of the stricture, not only to come in contact, but even to permit of closure and invagination without stretching.

5. Resection of the upper end of the ureter and implantation of the distal end into the pelvis has been performed in an important and interesting case by Kuester, and the result was brilliant success. His method was to split and unfold the end of the ureter, and to implant it into the opened pelvis, to which it was united with sutures.

6. In a similar case of stricture in the end of the ureter, especially if the ureter were not elongated or the kidney movable, I should prefer the plastic operation already described, as it is easier of technique, and as it proved successful in my case of traumatic stricture in the ureter below the pelvic orifice.

7. The ureter is accessible through an extraperitoneal incision, a continuation of the oblique incision for lumbar nephrotomy, from the twelfth rib down, along and one inch anterior to the ilium, and along Poupart's ligament to about its middle. This incision gives access to the upper three-quarters of the ureter and down to within an inch and a half or two inches above the bladder.

8. The vesical and lower pelvic portions of the ureter may be reached, as Cabot, of Boston, has pointed out, by means of the sacral operation or Kraske's method modified by osterplastic temporary resection of the os sacrum. In woman, the vesical portion of the ureter is accessible through the vagina.

9. The vesical orifice of the ureter may be reached from within the bladder by suprapubic cystotomy in man, or by dilatation of urethra or suprapubic or vaginal cystotomy in woman.

SITE OF INCISION IN ABDOMINAL OPERATIONS.

Heusner (Meeting of Surgeons of the Lower Rhine Province) does not attach as much weight as many other surgeons to making the incision by separating the muscles by blunt means in the direction of their fibres. While it is true that severed muscle fibres undergo some atrophy and loss of substance, it is equally true that they readily unite by new growth of connective tissue and completely retain their function, unless the nerves be damaged. Hence too much attention should not be given to mere separation of the fibres. Section of the linea alba has always been a favorite method, because the hæmorrhage is slight, the nerves are not injured, the parts are freely exposed to view, and a firm cicatrix is secured by careful suture. The objection made that there is a tendency to hernia only applies to cases in which suppuration occurs, since observations of tendon transplantations have shown that such bloodless structures heal easily, and that failures are due chiefly to errors in asepsis. Occasionally owing to the distension of the abdominal walls by pregnancy, obesity, etc., there is a subsequent development of hernia, and for this reason many operators prefer incisions through the sheath of the rectus or the fascia. In operations for perityphlitis there is no advantage in always placing the incision along the external margin of the rectus. During the last two years Heusner has largely employed transverse incisions through the recti, and finds them in general preferable to longitudinal median incision; although the several muscles gap considerably they can be readily united by deep sutures. The divided layers and sometimes even the subcutis are united by continuous catgut sutures. The cicatrices are firmer than in the median incision. Such transverse sections are well adapted for all operations upon the abdominal viscera.—*International Journal of Surgery*, Nov., 1907.

VASECTOMY AND PROSTATECTOMY.

In a discussion on this subject before the Congress of Scandinavian Surgeons, Professor T. Rovsing stated that he had derived excellent results in cases of prostatic enlargement from vasectomy, which he considers suitable in cases of soft hypertrophies of the prostate gland. In eighty-two vasectomies performed by him, a cure had been obtained in forty-nine cases and improvement in twenty-five. None of the patients died, and in this respect the operation has contrasted very favorably with prostatectomy, which even in the most skilled hands is attended with more or less risk. Removal of the prostate is followed by unpleasant sequelæ in a certain number of cases in the way of retention of urine, perineal

fistula, and urethral strictures. Hence a cure can never be predicted even after a successful operation. Among eleven partial prostatectomies performed by himself there had been two deaths, and among nine total prostatectomies, three deaths. He has operated both by the suprapubic and perineal route. In his opinion the prostate performs an important physiological function, and its total removal may be followed by severe psychological disorders, and, besides, by as complete impotence as after castration. It is for these reasons that some surgeons are returning to partial prostatectomy. A much safer and satisfactory procedure in his hands had been a suprapubic cystotomy, which he has done in one hundred and fifteen cases with only two deaths, and these in patients suffering with pulmonary disease who demanded a general anæsthetic, which was omitted in the other cases. After urinary retention has thus been relieved the question of performing a prostatectomy may be considered.—*International Journal of Surgery*, Nov., 1907.

PROGNOSIS OF APPENDICITIS.

Professor Lannelongue (Paris Academy of Medicine) contributes some new data to the prognosis of appendicitis, based upon urinary examination. In young persons, before the age of puberty, he has found an increase in the toxicity of the urine in acute appendicitis. If in severe cases of acute appendicitis the urinary toxicity is three or four times the normal, this indicates the necessity of an early operation. This test is carried out as follows: The apparatus consists of a rubber tube 3 meters long and 2 cm. thick, provided at one end with a glass funnel and at the other with a small stopcock, to which is attached a moderately fine trochar. After the required quantity of the patient's urine, which has been previously filtered, has been poured into the tube, the trochar is inserted into one of the dorsal veins of the ear of a rabbit, and the urine allowed to slowly flow in. The time required for the experiment ranges from one-half to one hour. If the animal is fatally poisoned spasms occur, followed speedily by death. According to his investigations, if the urinary toxicity is about five times the normal, an immediate operation is demanded.—*International Journal of Surgery*, Sept., 1907.

GYNÆCOLOGY AND ABDOMINAL SURGERY.

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

ELECTIVE GYNÆCOLOGIC SURGERY.

G. B. Holden, Jacksonville, Fla. (*Journal A. M. A.*, February 8), discusses the indications for the various elective gynæcologic operations and emphasizes the necessity of thorough prior examination in all cases and of clear, well-defined pathologic conditions warranting the operation. He believes that a large percentage of the curetings and dilatations performed are unnecessary, and many of them actually injurious. Dilatation and curetting are generally inadvisable in acute inflammatory conditions, and great care should be taken in selecting cases for its employment in chronic endometritis. In dysmenorrhœa it is most likely to be of service in cases in which the monthly pains are sharp and transient, rather than in those that are dull and continuous. It is an uncertain cure for sterility. Its chief utility is in uterine hæmorrhage for diagnostic or curative purposes, and when extrauterine pregnancy can be excluded. Cervical laceration may call for operation on account of the local inflammation around an unhealed tear or, sometimes, if very extensive, as a prophylactic measure against cancer. It is not justified by supposed reflex symptoms. In general, operative interference is indicated in uterine retrodisplacement except when local treatment has failed to relieve symptoms directly referable to the displacement. Few operations have given more relief than those for lacerated perineum, still the operator should have clear indications of its necessity before advising it. The severity of the symptoms rather than the degree of the lesion should be the guide. Oöphorectomy is imperative rather than elective in malignant disease, and is justifiable under some other conditions, such as tumor, cyst and certain inflammatory complications, but as regards these last, Holden believes that experience tends to produce conservatism. In any case, when possible, one ovary, or at least a part of one, should be preserved. The same general principles apply in case of hysterectomy. He sums up his views in the following general principles: We must be satisfied that the symptoms of which the patient complains are caused by the lesion toward which the operation is directed. We must have a reasonable assurance that these symptoms will be relieved or greatly benefited by the operation proposed. Finally, we must be reasonably certain that the probable danger from the operation itself, when compared with the severity of the lesion and the expectation of relief, is small enough to justify the patient in taking the operative risk. These propositions seem self-evident, but there is always danger of their being forgotten or their importance minimized. If they were always duly considered in elective surgery, we might do fewer operations, but we have more brilliant results from such as are done.

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EDITORIAL.

TUBERCULOSIS AND ITS PREVENTION.

The Ontario Board of Health has arrived at some very important conclusions regarding this disease. It is urged that these recommendations be embodied in legislation with as little delay as possible. These recommendations are in brief as follows:

The compulsory notification of all cases of tuberculosis occurring within the Province.

The care, necessary control and nursing of those who have not the means to provide such for themselves.

Enforced disinfection of premises in every case upon the removal, recovery, or death of the subjects of the disease.

The supervision of the home treatment of such cases by specially trained nurses connected with local boards of health, who would attend to the proper carrying out of precautionary measures under the advice and direction of attending physicians where such are employed.

Practical measures for the education of the people, and more especially the subjects of the disease, with a view to their own safety and that of their families and the public generally.

Legislation encouraging the establishment and maintenance of district sanatoria, with such equitable adjustment of the cost in connection therewith as will encourage immediate action being taken.

When eleven per cent. of all the deaths in the Province is due to tuberculosis it is high time that the authorities should give this matter their most serious consideration. During the past ten years this disease caused over 30,000 deaths.

THE CANADA LANCET has again and again directed attention to this subject, and has often pointed out that with proper preventive measures there would be very few cases of the disease in ten years. We quote with approval the following from the report of Dr. Hodgetts, to the Provincial Board of Health:

"Owing to the inertia, apathy and the lack of legislative powers conferred on health authorities, but little can be said regarding the 1,933 deaths from tuberculosis, except to again emphasize the great and ever-

pressing claim made upon municipal and county authorities for some early and active move on their part to make some move in the direction of providing help and assistance for those suffering from tuberculosis in some one or other of its many forms.

"This Province is behind that of Quebec in respect to notification of this class of cases, and the Legislature should, as the essential step in systematically combatting tuberculosis in all its forms, require a compulsory confidential notification to the health authorities, not for the purpose of placarding, but with the object of having the sufferer educated as to the personal precautions to be taken to prevent the infection of others, and with a view to the careful and systematic cleaning of all dwellings wherein tuberculous persons may reside."

Opinion has changed greatly during the past twenty years. The lay press is now calling for proper preventive measures. All this is along the lines that the public should move. Unless the people can be frightened there is little hope of progress. Education is good, but it must be accompanied by a fear of the disease. A little over twenty years ago the present editor of THE CANADA LANCET made an appeal at the meeting of the Ontario Medical Association for preventive measures. His views were denounced by two of the senior members of the association and teachers in a medical college, and was charged with creating foolish and unnecessary fear of the disease. The best opinion of the world now says: "Prevent, notify, disinfect, isolate by sanitarium."

BIRTHS, MARRIAGES AND DEATHS IN ONTARIO.

The vital statistics of the Province of Ontario for 1905 have been issued.

The population was estimated at 2,208,364 for both sexes and all ages. The total number of registrations was 103,708.

The registered birth rate for 1905 was 23.5 per 1,000, as compared with 22.8 for 1904.

The marriage rate was 9.2 per 1,000, an increase of 0.3 over the previous year. It is interesting to note the large numbers of marriages that were registered in the border municipalities. In Essex County the rate was as high as 32.2 per 1,000.

The death rate was 14.2 per 1,000, which is very little in excess of that for 1904.

For the past seven years the number of illegitimate births have been steadily declining. In 1900 there was one out of every 55 births illegitimate, whereas in 1905 there was one in every 74.

For the past seven years the numbers of twin births were 296, 401, 469, 523, 492, 549, and in 1905, 526. The triplet births in the seven years, 1899 to 1905, were, all told, 29.

The total death rate for the Province was 31,370. Of this number no less than 7,694 died under one year of age, and 9,434 under five years of age. This is a very high death rate among the infants, and steps should be taken to mitigate its intensity.

According to the main groups of disease, the deaths were as follows: Communicable (epidemic) diseases, 1,457; other general diseases, 4,812; diseases of the nervous system and organs of sense, 3,504; diseases of the circulatory system, 2,081; diseases of the respiratory system, 3,215; diseases of the digestive system, 3,193; diseases of the genito-urinary system, 1,145; puerperal diseases, 211; diseases of the skin and adnexa, 79; diseases of the locomotor system, 36; malformations, diseases of infancy and old age, 8,988; suicide, 109; accidents, 1,339; ill-defined causes, 1,200.

The report is a credit to Dr. C. A. Hodgetts, who is responsible for its contents.

BREAKFAST FOODS.

The Ontario Government has issued a bulletin on breakfast foods. We have read this bulletin with considerable care, and can speak in high terms of what it states, and would advise our readers to peruse its pages.

The points specifically studied are:

1. The chemical composition.
2. The influence of the thoroughness of cooking on the solubility of the organic matter in the raw foods.
3. The digestibility of the organic matter of the cooked and malted foods commonly sold as ready-to-serve, and the extent to which the starch of these foods has been changed to dextrin and maltose.
4. The digestibility of the different kinds of breakfast foods, and the influence of short and long cooking on the digestibility of the nutrients of oat and wheat meals.
5. The economic value of the various foods, based on the cost and on the determined composition and digestibility.

These various points are fully discussed. Careful experiments were conducted and much tabular matter is submitted. The conclusions arrived at are:

1. The various foods agree in composition with the grains from which they are made.

2. The oat products are richest in protein and fat and poorest in carbohydrates; the corn and rice foods are lowest in protein and highest in carbohydrates; while wheat and barley materials stand between the oat and corn products in composition, but more nearly correspond with the former.

3. The ready-to-serve foods contain more soluble matter than the uncooked wheat, oat and corn meals, but when these latter foods were cooked they were more soluble than some of the former class of foods.

4. The solubility of the ready-to-serve foods varied from 13.7 to 44.2 per cent. of the food, and this soluble part is composed principally of carbohydrates.

5. The oatmeals increased in solubility on cooking, up to eight hours, while with wheat meals, or farinas, no perceptible increase was noticed after two hours, solution being apparently due to insoluble starch being changed into soluble forms.

6. The digestibility of the various constituents of the different types of breakfast foods did not vary widely. Proteids varied most in this respect and were least digested in the ready-to-serve foods.

7. The carbohydrates of the so-called "predigested" foods were no better digested than those of the other foods.

8. The digestibility of oat and wheat meals was but slightly increased by prolonging the cooking from twenty minutes to eight hours, although the longer cooking increased palatability and probably ease of digestion.

9. The cornmeals are the cheapest energy producers, but taking other points into consideration, oatmeals are the most nutritious and economical, while the ready-to-serve foods are the most expensive.

10. Foods purchased in packages are much more expensive than those bought in bulk.

11. The older forms of breakfast foods, especially when sold in bulk, are among the cheapest food.

The thanks of the medical profession and the public are alike due to the authors of this bulletin. It will do much to educate the people on the whole subject of these foods. When discussing the topic of the "Digestibility of Breakfast Foods" the following words are significant: "Apparently the malting or predigesting to which Orange Meat, Force, and Norka have been submitted in the preparation process has not improved the completeness of their absorption. Even the carbohydrates, which would be the most affected by the previous treatment, are not so completely digested as in the other foods."

The bulletin quotes the words of Gudeman, who "found that raw cereals, if sufficiently cooked, were as quickly digested as the best malted

cereals, more quickly than prepared (cooked) cereals, and a large majority of the so-called malted cereals."

Then, again, the bulletin states that "from the data presented, it is evident that the ready-to-serve foods are no more completely digested than the raw foods when properly cooked; and if we may judge from the percentage amount of soluble matter in the different foods when ready to serve, they are no more easily or rapidly digested."

It would appear, therefore, that the best and cheapest forms of these cereals are the raw forms of the market.

DOMINION BUREAU OF HEALTH.

That there should be a Dominion Bureau of Health there is no difference of opinion among the members of the medical profession. There are none else in the country more competent to judge properly upon this subject than the doctors of Canada. They are the persons who have ever been in the van in all matters pertaining to the health of the people and the application of the principles of preventive medicine. The Canadian Medical Association has on several occasions placed itself on record approving of the establishment of a National Department of Health. The *Globe* a few days ago said as follows:

"The medical men in the Dominion House are making a praiseworthy move in the direction of establishing a Dominion Bureau of Health. There is no intention to interfere with the work of the Provincial Boards, and the success of the suggested departure will depend on it being made supplemental of the work carried on by the Provinces. Whatever new machinery may be created can find abundant scope for usefulness without encroaching on ground already occupied. The facts brought out in the debate go to show that we are not making full use of the scientific knowledge of the age in preventing many forms of disease that have been traced to their sources. The cost and loss through typhoid fever in Canada is estimated at five and a half million dollars a year. It is well established that typhoid can be contracted only by swallowing the germs with food or drink. There is here a chance to educate the public to a proper appreciation of the need of continuous care. There is also scope for greater usefulness in extending the work of the staff of analysts now maintained by the Inland Revenue Department. Various lines of food supplies are now analyzed, and reports are issued showing the extent to which adulteration is practised. Equal facilities should be afforded for testing the water in wells and in the various sources drawn upon by smaller municipalities unable to bear the expense of analysis.

"With regard to tuberculosis, it is estimated that 40,000 suffer from the disease every year, and there are 8,000 deaths. It would be over-sanguine to hope to stamp out this disease, for every preventive change preserves the life of those more strongly predisposed to yield to its ravages. Weakening the attack of the tuberculosis germs preserves a generation with proportionately less powers of resistance. But much can be accomplished by education in impressing the need of avoiding unnecessary exposure to attack, and instructing patients regarding the duty of properly caring for themselves and their associates. The unsettled problems with regard to contagious diseases could also be taken up by a Federal bureau, and investigations might lead to the discovery and adoption of better methods in treating maladies likely to become epidemic. The best form for a Dominion Health Bureau to assume would probably be an extension of the work of the Inland Revenue Department in protecting the public against impure and adulterated food. While the records of the fight against preventable diseases are so unsatisfactory there will be a continuous movement for both the creation of new machinery and the more efficient use of that which is already in existence."

With the foregoing we concur. We hope that other influential lay papers will do likewise. There are more lives lost each year from diseases that are quite within the control of preventive medicine than would pay off the national debt, were the value of these lives placed on the basis of dollars.

Take the 8,000 who die each year from tuberculosis. These die at an average age of about 20 years. The value of one dollar a year on the expectation of such persons would be about \$22, and allow that one with another earned \$400 a year. The value of each life would be \$8,800, and for 8,000 lives the sum would be \$70,400,000. This must be added to the vast number of other deaths of a preventable character.

The infant mortality for a healthy young country such as this is simply appalling. Then we must add the deaths due to typhoid fever, and a number of other infectious diseases.

We have taken the ground on many occasions that the Government, Federal or Provincial, should publish information for the people and send it to them, either through the mails or in some other way. Educate, educate, educate.

SIR OLIVER LODGE AND SPIRITUALISM.

Two famous knights cannot agree on this subject. Sir Oliver Lodge tells us he believes in spiritualism and that we can get messages from the

dead *via* the medium. Sir William Ramsay tells us he attended the meetings of those who cultivate the acquaintanceship of the medium and pretend to receive messages in this way, but he gave the whole thing up in disgust and does not believe that any such messages are possible. We believe that there is the admission of much matter that is not borne out by adequate evidence.

The less likely a thing is to be true, or the more it is opposed to our observation and experience, the stronger should be the proof when people are asked to give it credence. But in this matter of spiritualism and medium intervention the opposite is the case. The more unlikely the story the less proof do the advocates vouchsafe to us. Judging by the cable despatches we are inclined to think that Sir Oliver Lodge admits the reported manifestations on rather weak evidence, indeed, on practically no evidence at all. This is most unfortunate, as many may be guided by one occupying so high a position in the educational world as does Sir Oliver Lodge.

The ancient Greeks predicted events by the appearances of the viscera of a slain animal. No one now would accept such a forecast. They were mistaken and misguided. In the middle ages the belief in witches was common. It is not so very long since witches were burned at the stake. It is now known that these were unfortunate human beings on whom a suspicion rested of being "no canny." Does Sir Oliver Lodge believe that there ever was a real witch and that the records of bygone history in the matter of witches are true? We would like to ask him if there ever was a real Earl King, Banchee, or Water Kelpie. If such creatures are wholly mythical, then what of the medium? Martin Luther declared the Devil appeared in his wood-box and rattled the sticks about.

Then Sir Oliver Lodge declares that we can use other persons' brains, or rather minds. Well, this is true in one sense. We are always making use of the progress of science and knowledge. This, however, is vastly different to making actual use of another person's mind as we would of his desk, as Sir Oliver tells us we can do. So far we believe the weight of evidence is overwhelmingly opposed to the views set forth by Sir Oliver Lodge.

Physiologists, anatomists, alienists, psychologists, biologists have not been able to discover any grounds upon which to rest such teachings. What is required is evidence and proof, not mere assertion. So far there has been none of the former, though much of the latter. We ask Sir Oliver Lodge to take with him some eminent scientist, have a medium appear and make a revelation from the dead, and then allow the visiting scientist to tell us his impressions of the event.

RAILWAY ACCIDENTS.

The number of railway accidents and the long lists of killed and injured call for the most serious and thoughtful consideration on the part of legislators and humanitarians. We do not propose entering fully into the causes of these accidents, but would submit a few that have appeared to us as the principal ones, as gathered from the reports of these disasters.

1. Defects in the road or the machinery of the engine or train. This cause could be minimized by proper workmanship and inspection.

2. The wilful neglect of the orders laid down for the guidance of those in charge of trains. This appears in disobeying the time schedule, or the speed of trains on curves, bridges, and points of danger.

3. Too long hours for those in charge of trains. This leads, of course, to bodily and mental fatigue. Under these conditions an honest conductor or engineer may make a fatal mistake. This is well known to all medical men. When the great Napoleon made his rounds one night he found a sentry asleep and took his gun from him, and then awakened the sentry. The result was a shortening of the hours of duty, as it was found the sentry had been too long at his post.

4. The eyes should be properly examined as to their capacity to distinguish correctly the color signals; and their range of vision. All errors of refraction should be carefully noted. This is very important, and should be made compulsory by the State. These examinations should be conducted by State experts, and charged to the companies.

5. Those in charge of trains and vessels should also undergo a physical test of health and fitness for the duties which they will be asked to perform. A man with organic heart trouble, Bright's disease, pulmonary tuberculosis, asthma, epilepsy, deafness in one or both ears, etc., is not in a fit condition to take charge of a train. He may break down at a moment when his presence is most urgently required; or he may make a mistake that will lead to grave consequences. In this physical examination, the mental conditions should be made the subject of the closest scrutiny. We once knew a person in charge of a train who was the victim of hallucinations of sight.

We think the time has come when there should be such legislation as would tend to lessen the frightful slaughter of human lives on our railways. We think this is possible. We believe that the majority of railway accidents are preventable. If they are preventable, then they should be prevented. If the State made it obligatory that railway companies should pay to the State a definite amount for every person killed or injured while carried by these companies we would soon hear less of these accidents.

In addition to Government experts examining certain railway employees, it would be well to have the roads and engines also subjected to proper examination by representatives of the Government.

DR. H. T. BULSTRODE ON TUBERCULOSIS.

Dr. Bulstrode is recognized as a high authority on tuberculosis. He has acted under the Local Government Board for England for about five years. He has visited all the sanatoria in England and Wales for the treatment of tuberculosis, and has held many interviews with medical officers of health. As the result of this experience he has compiled a bulky report which contains much valuable information.

One of the features of the report that is peculiarly pleasing is the statement that throughout England and Wales for the past fifty years there has been a steady decline in the incidence of tuberculosis. In some localities this decline has been very marked, owing to active measures having been instituted for the repression of the disease.

He gives his support to the sanitarium treatment of the disease. He regards these institutions as valuable agencies in the cure of the disease in its earliest forms, as the means of isolating the more advanced cases, and as propagators of useful knowledge.

He holds that human tuberculosis is not uncommonly the result of swallowing animal food and milk that contain the bacilli. Just in what proportion the disease is thus originated he does not state.

He also contends strongly that the disease may be spread by the minute droplets that are driven off from the mouth in the act of speaking or coughing. This is a real source of danger and must be guarded against as well as that of infected dust. This position we think is sound. Some years ago Flügge proved that these droplets may be projected at least six feet away from the infected person. The bacilli have been frequently found in these droplets.

A feature of the report that merits attention is that where he discusses the soil as well as the bacilli. It is of the utmost importance to improve the social conditions of the people. It is mentioned that throughout the German Empire the disease is markedly on the wane, owing to the better conditions under which the people live and work. In Ireland the reverse is true, and unhappily the disease is there greatly on the increase.

On the subject of compulsory notification he has some careful words. One can judge from these that, while he approves of notification, he does not wish to hurry its application too much in advance of public opinion. The hasten slowly course seems to be the one in his mind.

He approves of the German insurance custom of granting assistance to working men and their families in sickness due to tuberculosis. This enables a man to go to a sanitarium for treatment, and feel that he will be provided with the means of paying his way, and that his family will be supported during his stay in the institution.

Then he gives due attention to the education of the people. He regards the teaching of hygiene in the schools as one of the means for combating this as other diseases.

We can recommend the perusal of this able report to all who are interested in matters of public health, and especially in the prevention of tuberculosis.

THYROIDECTOMISED GOAT'S MILK IN GRAVES'S DISEASE.

In the *Lancet* (London) for January 25th, Mr. Walter Edmunds reported three cases of exophthalmic goitre which had been treated with the milk of goats from which the thyroid glands had been removed.

It is now nine years since Lonz introduced this method of treating Graves's disease. The difficulty in obtaining the fresh goat's milk stands in the way of the general employment of this method of treatment.

To overcome this difficulty a preparation made from the milk of thyroidectomised goats has been put on the market according to the process of Drs. Burghardt and Blumenthal. This preparation is sold under the name of Rodagen. In the *Lancet* for February 1st, Dr. Hector MacKenzie, Physician to St. Thomas's Hospital, recommends this preparation. He contends that it must be given much more freely than the usual directions indicate.

By the use of this preparation he has been successful in the management of a very severe case, and the symptoms became greatly ameliorated. He employs about one ounce a day of Rodagen.

THE TREATMENT OF FIBROSIS.

The medical profession will be ready to welcome any treatment that may relieve or cure the numerous degenerations in which there is an excessive formation of fibrous tissue.

Several preparations have recently been placed in the hands of the medical profession. Fibrolysin, thiosinamin, and tiodine are examples of these. They have been tried on contraction of the pylorus, Dupuytren's contraction, cirrhosis of the liver, and various forms of spinal cord sclerosis.

Dr. William Murrell, in the *Medical Press and Circular* for January 29th, reports a case of Erb's spinal paralysis caused by syphilis, with a mixture of motor and sensory symptoms and some involvement of the bladder functions. This is the disease described by Erb as "syphilitic spinal paralysis."

In a case of this sort Dr. Murrell tried iodine (thiosinamin-ethyl-iodide). It is administered hypodermically and the dose is 1 c.c., containing $3\frac{1}{2}$ grains of the drug.

The treatment was commenced with 10 minims of the solution. Three days later a similar injection. These gave no rise of temperature. The third injection was one of 15 minims. This was followed by a rise to 100.2. Three days later another injection of an equal amount was given. The temperature again rose to 100.2. Three other injections of the same amount, at intervals of three days, were given, without rise of temperature. The dose was then raised to 17 minims every alternate day.

The improvement of the patient was very marked, especially in locomotion. On 2nd October, the patient was scarcely able to walk and could not stand without support. By the middle of December he could walk without the aid of a stick, and could ascend a long flight of stairs. In October he was disturbed 12 or 15 times a night to void urine, by December he was only disturbed once or twice. He had 26 injections in all when he left the hospital to take up an active outdoor situation. The drug must be used with much care.

ONTARIO MEDICAL ASSOCIATION.

The twenty-eighth annual meeting of the Ontario Medical Association will be held in Hamilton under the presidency of Dr. Ingersoll Olmsted on the 26th, 27th, and 28th of May next.

The addresses in Medicine and Surgery will be delivered by Dr. Charles Stockton and Dr. Charles Scudder, respectively. The former, who is well known to us as the American editor of Nothnagel's work on the Diseases of the Stomach, is Professor of the Principles and Practice of Medicine in the University of Buffalo. The latter is surgeon to the Massachusetts General Hospital, and has distinguished himself as the author of a work upon fractures which has been received with so much favor that six editions have appeared within eight years.

The profession generally is invited to attend. Any regular practitioner of medicine in good standing may become a member. Come and help make the Hamilton meeting a success. The annual fee is but two dollars.

PERSONAL AND NEWS ITEMS.

—
ONTARIO.

Dr. and Mrs. Algie, of Alton, are settled in their new home, 75 Dewson street, Toronto.

In London for January there were 82 births, 41 marriages, and 75 deaths. Of the deaths 22 were 70 years and over and 5 were over 90 years.

Dr. Hutchinson, the Medical Health Officer for London, was very seriously ill with pneumonia in the early part of February.

There were, in 1907, 4,563 deaths in Toronto; 3,635 marriages, and 6,715 births.

Dr. John D. Birch, the popular house surgeon at Victoria Hospital, London, has resigned his position and will go to Calgary.

Dr. N. J. Tait, formerly of Ingersoll, has moved to Toronto and has located at 498 Spadina avenue.

Dr. E. R. Langrill, who was located for some time on Spruce street, Toronto, has removed to Virden, Manitoba.

Dr. C. H. Britton, of East York, had a severe attack of pleuropneumonia in January, but has now quite recovered.

Dr. H. A. Abraham, who has been in Winnipeg in charge of the transcontinental railway men in River Hospital, has returned to Toronto.

Dr. J. Milton Cotton has removed from 218 Simcoe street to 210 Bloor street west, Toronto.

Dr. Morley Currie, M.P.P., is now recovered from his recent severe illness. His many friends will be glad to hear the good news.

Dr. J. O. Orr, the manager of the Toronto Industrial Exhibition, was laid up for some time with grip, which affected his eyes, and then caused a general attack of rheumatism.

Dr. W. J. Hunter Emory, of Toronto, who was formerly registered with the College of Physicians and Surgeons of Ontario as a homœopath, had his registration changed in 1902 to that of a regular practitioner.

Dr. T. McPherson, of Stratford, has returned with the qualification of F.R.C.S., Eng. He took a post-graduate course at the Throat Hospital, Golden Square.

Dr. C. A. Hodgetts, Secretary of the Provincial Board of Health for Ontario, is authority for the statement that smallpox has cost the Province in the past ten years \$2,000,000.

Dr. D. C. Murray, formerly of Atwood, has purchased the practice of Dr. Rooney, of Shelburne. Dr. Murray is a graduate of the University of Toronto, and was house surgeon in Grace Hospital for a year.

The Canadian Hospital Association will meet in the Parliament Buildings, Toronto, on Easter Monday and the Tuesday following. An interesting programme has been arranged for the occasion.

The Toronto Academy of Medicine has organized sections in Rhinology and Laryngology and in State Medicine. The work of the Academy has been very successful so far.

Dr. W. C. Hærrimar has been transferred from Rockwood Asylum, Kingston, to Mimico, Toronto, to succeed Dr. Foster, who was transferred to London.

Dr. Angus McKay, of Ingersoll, who was nominated as the Liberal candidate for South Oxford, has withdrawn from the field, as he does not wish again to enter the domain of active politics.

Dr. George Elliott, of Toronto, and General Secretary of the Canadian Medical Association, has been appointed the Medical Examiner for Ontario for the Royal Arcanum.

Dr. J. Hutchison has opened a sanitarium at 218 Simcoe street, Toronto, for the treatment of liquor and drug habitués. The institution is kept in first-class manner.

Dr. Unsworth, who has been in connection with the Mountain Sanatorium, Hamilton, has resigned, and will go to Europe for a period of study.

Dr. Woodhouse, who was a short time ago appointed medical superintendent of the Isolation Hospital, Toronto, has resigned and moved to New York to accept a position there. Dr. Tweedie will temporarily again take charge of the institution.

During the month of January of this year there were 447 deaths in Toronto. Of these, 117 were one year of age or under, while 81 were 70 years of age or over. Pneumonia caused 74 deaths, tuberculosis 26, diphtheria 18, scarlet fever 10, typhoid fever 5, and whooping cough 2.

From Brockville comes the news that a league has been formed to combat compulsory vaccination. The league intends resisting the order of the Board of Health making it obligatory that children be vaccinated before entering school.

Dr. Moore, of Horning's Mills, has removed to Toronto Junction. Dr. A. B. Cutcliffe has been appointed market inspector for Brantford. Dr. Proctor, of Port Perry, has sold his practice to Dr. J. D. Berry. Dr. E. N. Coutts, of Agincourt, has been appointed a coroner for York County.

Dr. W. J. Stevenson has been elected president of the London Medical Society; Dr. Alfred E. Morgan has been appointed associate coroner for Toronto; Dr. Norman has resigned his position as assistant superintendent of the Orillia Institute for the Feeble Minded.

Lady Minto Hospital, at New Liskeard, has been doing good work. The average daily cost of patients was \$1.08. The institution has cost up to date \$18,000, of which \$10,000 has been raised by grants and private subscriptions. The Victorian Order of Nurses has taken an active interest in the hospital.

The medical laboratories of Queen's University were opened recently. The Ontario Government gave \$50,000 towards the buildings. Dr. Barker, of Johns Hopkins, gave an address. Dean Connell gave a history of Queen's Medical College from its inception in 1854. These laboratories will add greatly to the efficiency of Queen's Medical College.

The profession of Ontario should keep well in mind the meeting of the Ontario Medical Association, which is to hold its annual sessions in Hamilton on 26th, 27th and 28th May. Dr. Charles Stockton, of Buffalo, and Dr. C. Scudder, of Boston, will give the address in medicine and surgery respectively.

Dr. D. J. Gibb Wishart, Associate Professor of Laryngology and Rhinology in the University of Toronto, leaves early in March for Italy, where he intends to follow the clinics of Professor Massei and others in Naples, Rome, and Turin. Subsequently he will attend the International Laryngo-Rhinological Congress in Vienna in Easter week, which is being held to commemorate the fiftieth anniversary of the establishment in Vienna of clinical laryngology and rhinology by Turck and Czermak. Later, Dr. Wishart will spend some weeks at the Clinics of Professors Killian in Freiburg and Hammel in Heidelberg, before going to England. The doctor and his wife expect to return to Canada about the middle of June.

MARITIME PROVINCES.

Major F. L. Vaux is in charge of the military hospital at Halifax. He has just completed a period of training at Aldershot, England.

Dr. J. F. Lessel, after obtaining the qualifications of M.R.C.S., Eng., and L.R.C.P., Lond., has located in Halifax.

Dr. John Stewart, of Halifax, has returned from his trip abroad. His health is reported to be greatly improved.

Dr. A. R. Cunningham has gone to London and Vienna for a special course of study.

Drs. Addy and White, of St. John, took a post-graduate course in Edinburgh. They secured the M.R.C.S., Eng., and the F.R.C.S., Edin.

Dr. M. E. Devine, of Kingston, N.S., and Dr. L. E. W. Penney, of New Germany, N.S., were married recently.

Dr. W. N. Wickwire suffered a slight concussion of the brain from a fall; Dr. F. Anderson has recovered from an attack of appendicitis, and Dr. J. Ross from a prolonged attack of grippe.

Dr. A. P. Reid, Provincial Health Officer for Nova Scotia, has gone to Mexico for a trip till April. Dr. L. M. Murray, of the Medical College, is looking after his work in his absence.

The many friends of Dr. Lionel Pritchard, of Bay Roberts, Newfoundland, will hear with regret the announcement of his wife's death. She was the daughter of Sir William Whiteway. Dr. Pritchard studied in Toronto.

The *Maritime Medical News* is to be placed on a better financial basis. The journal is capitalized at \$1,000, and shares for another \$1,000 are offered. It is hoped that this additional cash will enable the management to make the journal sufficiently profitable to pay 5 per cent. on the capital.

WESTERN PROVINCES.

The vital statistics of Winnipeg gave, for 1907, 3,323 births, 1,458 deaths, and 1,900 marriages.

In Brandon there were in the year 1907, 191 marriages, 202 deaths and 272 births.

Regina has carried a by-law authorizing the expenditure of \$100,000 on a new hospital.

A home for aged poor has been opened in Winnipeg in St. Paul's school through the efforts of the Christian Women's Union.

The hospital at Selkirk has been opened. There were enough donated to the institution at the opening to supply it for some months.

The first election for the Senate of the University of Alberta has been fixed for 16th March.

Dr. J. D. Harrison, of Edmonton, has recovered from an attack of typhoid fever, which was considered quite serious.

Dr. McKenty, of Winnipeg, has quite recovered from a severe septic infection in his hand.

Dr. Knight, who was in practice at Ninga, has bought Dr. McIntyre's practice in Winnipeg.

In many places throughout the West a fee of \$5 has been agreed upon for life insurance examinations. Most of the companies have complied.

In Winnipeg the authorities have power to close houses where the plumbing is not up to the required standard. Last year 150 houses were closed because of defective plumbing.

An interesting case came up at Edmonton. The medical officer turned a patient in the hospital over to Dr. Gillespie for attendance. Dr. Gillespie rendered his bill for \$144 to the city council, which disclaimed liability on the ground that the medical health officer had no right to contract a debt for the municipality.

BRITISH COLUMBIA.

In the City of Vancouver during the year 1907 there were 1,034 births, 699 marriages, and 897 deaths.

The fund for the tuberculosis hospital is growing. Over \$80,000 has already been subscribed.

Dr. McGuigan, former Mayor of Vancouver, was recently seriously ill in St. Paul's Hospital of that city.

Dr. Gibb, of Victoria, after spending six months in Britain and the Continent, has returned to his practice again.

Dr. Williams, of Vernon, has gone to Britain for some time. He expects to visit Kimberley in South Africa.

Dr. J. C. Davie, of Victoria, has been very ill in Arizona. His professional brethren presented him with his portrait on account of his efforts for the Jubilee Hospital.

In Nelson the Medical Health Officer, Dr. Arthur, has called attention to the fact that children with infectious diseases attend Sunday schools who would not be allowed to attend day schools.

The children in New Westminster have organized themselves for the purpose of maintaining twelve cots for children in the hospital. It will cost about \$1,500 a year.

The Royal Jubilee Hospital, Vancouver, has asked the city council for \$10,000 for the year 1908. An effort is to be made to avoid a deficit at the end of the year.

Dr. Hall, who has been in charge of the St. John's Hospital at Ketchikan, Alaska, is spending a short time in Victoria, Vancouver, and San Francisco. He will return to his practice in the north.

FROM ABROAD.

According to the annual report of the Royal Infirmary, Edinburgh, the daily cost per patient was only 72 cents.

The Berlin Academy of Medicine will shortly commence the publication of all the Greek on medicine extant.

In India, where the plague has been raging for a number of years, the Salvation Army has inaugurated an effort to stamp out the disease by breeding on farms a variety of cat that is destructive of rats.

Dr. T. S. Clouston, who has held the position of Medical Superintendent of the Royal Asylum, Morningside, Edinburgh, has just resigned. He is well known as an authority on mental diseases.

The medical men of the Department of the Somme, France, have struck owing to a reduction in the fees to be allowed for the attendance on poor patients under the Assistance Medicale.

The State of Pennsylvania has voted \$1,000,000 for the enlargement of Mount Alto sanitarium and for the establishment of free dispensaries in every county in the State for the purpose of fighting tuberculosis.

Through the efforts of Drs. Nass and Courtault, of Paris, an attempt is being made to secure a rest home for the medical profession of France. There are now fair prospects of the scheme being successful.

Professor Domenico Peruzzi died at Lugo, Italy, January 8th. He was in his eighty-ninth year and was the first surgeon in Italy who successfully performed a laparotomy.

N. H. Choksy, M.B., plague officer at Bombay, has issued a statement to the effect that the mortality in plague is about 89 per cent. In those treated with the plague serum the mortality is about 40 per cent.

C. J. Wright, M.R.C.S., Eng., Professor of Obstetrics at Yorkshire College, died a few weeks ago at Leeds. He took a great interest in the Leeds Hospital for Women and Children.

The new amendments to the Education Act in Britain are having a very stimulating effect on many of the county councils in the way of inducing them to appoint medical officers of health who give their whole time to medical topics of health and the inspection of schools.

A national society has been organized in Britain for the destruction of vermin, with Sir Lander Brunton as president, and Lord Avebury as treasurer. Many leading medical men and scientists are taking part in the movement.

Professor Adalbert von Tobold, the eminent laryngologist; Professor Oscar Lassar, the hygienist; Professor Hoffa, the surgeon, and Dr. Julius Becker, President of the Berlin Medical Chamber, all died in Berlin in the latter part of December.

The number of medical students this year at the University of Edinburgh is 1,423, and at the University of Glasgow is 622. In 1885 there were 2,026, and 818 respectively at these universities. This shows a marked falling off in these years.

Dr. A. G. Robb, of Belfast, in the fever hospital, has been treating cerebro-spinal fever with Flexner serum. The death rate under this treatment was 26 per cent., whereas under other methods of treatment it was about 80 per cent.

Dr. William Goldzieher, Professor of Ophthalmology in the University of Budapest, has revived the old treatment of severe cases of trachoma and the resulting pannus by inoculation with gonorrhœal pus. The result in a very severe case was excellent.

The Woodmen of the World have secured a site of 1,000 acres near Colorado Springs. On this a sanitarium is to be erected for the purpose of treating members of the order suffering from tuberculosis. It is to be called Ambley Ranch.

Sleeping sickness is spreading. It has taken hold of several hundred miles along the upper Nile, and has gone as far south as Rhodesia. In 1906, Uganda lost about 50,000 from this disease, and the whole Congo region about 400,000.

Dr. Hallopean read a paper at the Academie de Medicine, of Paris, in which he advocated strongly the local injections of atoxyl at the beginning of syphilis. He claims that this treatment aids the administration of mercury and alleviates the disease decidedly."

Dr. George Turner, the distinguished Medical Officer of Health for the Transvaal and Orange River Colony, has resigned his position. During the many years he filled his public offices he proved a most efficient public servant.

Dr. William Henry Power has reached the age limit of 65 years and has retired from the post of medical officer to the Local Government Board of England. His place has been filled by Mr. John Burns by the appointment of Mr. Arthur Newsholme.

A writer in the *Lancet* (London) asks the question if the progress made by the medical profession has brought the seeds of decay. He thinks that with an average income of about £250 (\$1,250) there must be a falling off in the numbers who will study medicine.

The Brazilian Government has voted a sum of money for the establishment of an experimental pathological institute at Manguinhos. The institute is intended for the study of parasitic and infectious diseases of man, animals, and plants, and the preparation of serums.

The Secretary of State for the Colonies, has sent Dr. W. J. Simpson, Professor of Hygiene at King's College, and Dr. J. A. Haron, of the Medical Service of East Africa Protectorate, to the Gold Coast to study the plague at Accra and to institute steps for its arrest.

Some time ago, our esteemed contemporary, the *Lancet*, London, commented upon Tucker's Asthma Specific. The *Lancet* was sued and damages to the extent of £1,000 were awarded. The *Lancet* intends appealing the case.

In the *Transvaal Medical Journal* the item appears that the Transvaal Medical Council has ruled that a physician is acting quite properly when he gives the diagnosis of a case on public documents for the civil service. This is according to the law of the colony also.

Herman Suellen, Professor of Ophthalmology in the University of Utrecht, died recently. He was in his seventy-fourth year and held the position of professor of ophthalmology since 1877. He occupied a unique position both as an operator and as a scientific investigator.

Sir Thomas McCall Anderson, Professor of Medicine in the University of Glasgow, took place very suddenly on 25th January. He was

leaving a banquet in St. Enoch's Hotel, and was seen to stumble. In a few minutes he was dead.

At the Academy of Medicine of Paris, M. Darier gave a paper on the treatment of diphtheritic disease of the eye by the use of anti-diphtheritic serum. In a case thus treated he had better results than by any other method previously tried.

There has been a lively period in Battersea, England, over the Brown Dog Memorial. There have been not a few in that good old town who have claimed that "vivisection is morally offensive and has not justified itself by results." This is the sort of thing even this century is capable of producing.

New Zealand has enacted regulations that will prevent the landing of consumptives who are unable to provide for their own maintenance in some sanitarium. This is quite proper. Tuberculosis can only be stamped out when Governments take a hand in regulating the movements of those afflicted with the disease.

Much excellent work is being done in Australia to curtail the sale of patent medicines. At a meeting of the Sydney Chamber of Manufactures the following was adopted: "That all proprietary medicines should have all the ingredients and quantities of each plainly printed in English terms on all labels and wrappers."

The Royal College of Surgeons in Ireland has decided to offer a prize this year of £120, or about \$600, for the best essay on the present state of the medical profession, the condition of hospitals, the state of medical schools, and the modes of medical examinations. This is known as the Richard Carmichael prize.

The administration of the asylums in Italy have lately been subjected to very severe criticism. The old plan of strapping maniacal patients and other antiquated methods are resorted to. Dr. Giovanni Mengazzini, Professor of Neuropathology in Rome, has thrown his whole influence against these methods.

At a recent trial in England a witness refused to kiss the Court Testament, and produced his own from his pocket. The trial judge refused to allow the witness this privilege. The result was that his evidence was not taken. The case went to appeal because his evidence was not admitted, but the appeal was dismissed.

Dr. F. Paradi, of Koloszvar, has reported excellent results in the treatment of uterine gonorrhœa with a 5 per cent. solution of sodium lygosinate which was introduced by Dr. Fabinzi. The injections are made twice a day. This preparation does not irritate the tissues and is rapidly germicidal to the gonococcus.

Much valuable work has been done recently on the treatment of the sleeping disease. Drs. Moore, Todd, and others have carried on many experiments on infected animals. They have found that atoxyl is the most valuable drug, but it will not alone cure the disease. They find that the combination of succinimide of mercury with atoxyl cured a number of rats.

The educational number of the *Progrès Médical* points out that as the standard of medical education is raised the numbers in the profession are ever on the increase, so that the position of the doctor is becoming more and more precarious. The steps that have been taken to ennoble his calling have had the effect in another direction of lowering his status. The danger to the medical profession comes from within its own ranks.

The foundation stone of an institution for the teaching of medical history will soon be laid in Vienna in connection with the University. The Government is granting some aid to the institution and medical men are making personal subscriptions to it. It will contain connections of books, records, specimens, etc., bearing on the history of medicine. Lectures are also to be given.

A school for the training of certificated nurses has been opened in connection with the Salpêtrière, Paris. This is the first of the kind in France. The course is to be one of two years. The nurses live in a building for the purpose, where each has her own room. In the forenoon they study and have lectures. The lectures and studies cover anatomy, physiology, hygiene, massage, invalid cookery, etc.

There has been an active discussion and agitation carried on in England for some time regarding the admission of women to the examinations of the Colleges of Surgeons and Physicians. The College of Physicians have treated the matter with more liberality than the College of Surgeons. The latter body have agreed to admit women provided the fellows and members concur in this view. This would settle the matter with both bodies.

Dr. Leander Starr Jameson, Premier of Cape Colony, has resigned. The party of which he was the leader suffered defeat in the recent elections. Dr. Jameson is a native of Edinburgh, where he was born in 1853. He went to South Africa on account of ill health and became an intimate friend of the late Cecil Rhodes. He was made administrator of the South African Company in 1891. In 1895 he led the famous raid and surrendered on New Year's day, 1896, at Krugersdorp. For this he was imprisoned for a few months. He served throughout the South African war, and was elected for Kimberley in 1900. In 1904 he became Premier, and last year attended the Imperial Conference.

OBITUARY.

JOHN McMASTER, B.A., M.D.

We regret to announce the death of Dr. John McMaster, which took place on the 19th February, in the Toronto General Hospital, after an illness of ten weeks, caused by a poisoned wound on his hand. He underwent a number of operations to control the disease, and hopes were entertained for his recovery until a few days before his death, when a further operation had to be performed.

He was a farmer's son from near Barrie. He studied at the University of Toronto and obtained his degrees in Arts and Medicine, namely, B.A., M.D. He was at one time the Principal of the Technical School.

Since he graduated he has resided at 116 McCaul street, Toronto. He devoted most of his time to x-ray work, on which branch of medical practice he was regarded as very high authority. His contributions upon this subject have been both numerous and valuable. Before his eyesight began to fail him, he was a regular contributor to the pages of THE CANADA LANCET. At the time of his death he had charge of the x-ray department at the Toronto General Hospital.

Dr. McMaster was in his fiftieth year. He was married and leaves his widow, a daughter 20 years old, and a son 9 years, to mourn his loss. To these THE CANADA LANCET extends its sincere sympathy. Dr. McMaster will be long missed by the medical practitioners who knew him. He was an able practitioner, a good citizen, an honorable member of the profession, and a most agreeable companion.

T. M. MILLER, M.D., C.M.

Dr. T. M. Miller, of Medford, Wisconsin, died on 1st February, 1908. He was a graduate of Trinity Medical College, and practised for some time in Keene, Ont. He was 57 years of age. His remains were interred in Peterborough.

J. K. RIDDALL, M.D.

Dr. James Knight Riddall, a former resident of Orangeville and Parkdale, aged 72 years, died on 6th February, in New York, at the home of his daughter, Mrs. Winne. His remains were interred in Orangeville.

F. W. GOODWIN, M.D.

The late Dr. Goodwin died at his home in Halifax in the latter part of December. He had been ill for some time with Bright's disease, but his end came rather suddenly. He was born at Baie Verte in 1857. He was educated at Acadia College and Mount Allison College, and took his medical course in Halifax and London. He held the degrees and diplomas of M.D., C.M., M.R.C.S., and L.R.C.P. He was Professor of Materia Medica and Therapeutics in the Halifax Medical College. He took an active interest in the various medical societies of the city and Province. He leaves a widow and four children to mourn his loss.

C. D. MURRAY, M.D., P.A.M.C.

Dr. Murray was a captain in the Army Medical Corps at Halifax. He was in his forty-third year and graduated from Edinburgh in 1889. For many years he was physician to the Victoria Hospital at Halifax, where his clinical teaching was most acceptable to the students. He was widely read in general literature as well as being a close student of medical progress. He leaves a widow and one daughter. He was very popular with all who came in contact with him.

FRANK H. MOSS, M.D.

Dr. F. H. Moss was instantly killed in a railway accident near Palo Alto in California, where he had been in practice for the past fourteen years. He was a son of the late Chief Justice Moss and a nephew of Chief Justice Sir Charles Moss. He was educated at Upper Canada College, the School of Practical Science, and the Medical Department of the University of Toronto. He graduated in 1892. He leaves a widow and an infant son. He was about 40 years of age.

SUSANNA CARSON MOYES, M.D.

Dr. Susanna Carson Moyes died in the hospital at Chatham on 7th February. She was well known in missionary circles, and, with her first husband, Louis Rijnhart, attempted to enter Thibet. Her husband and child died as the result of the privations they met. On her return to Canada she lectured on Chinese missions. On going to China she married Rev. Mr. Moyes, and was associated with him in his work at Chengtu.

HENRI LARUE, M.D.

Dr. Larue, who had been located at Hull for a short time, died at Quebec. He was a son of Hon. Mr. Larue of Quebec. He was married to Senator Gadbout's daughter.

DR. OVERTON.

Dr. Overton died at Exploits, Newfoundland, where he had lived and practised his profession. He was a graduate of Columbia University.

F. J. BRADD, M.D.

Dr. Bradd died in Nicholls Hospital, Peterborough, in the latter part of December, 1907, where he had been engaged in practice for the past ten years. He graduated from the University of Toronto in 1888. Deceased was in his forty-eighth year.

JOHN H. FISHER, M.D.

The death of Dr. John H. Fisher, at his residence, 18 St. Patrick street, Toronto, was quite sudden and unexpected. He had attended his patients as usual on Wednesday and Thursday, and at 4 o'clock on Saturday, 15th February, was dead from an obscure form of blood-poisoning following upon a cold and influenza, from which he had suffered only two days. Several physicians were in attendance, including his brother-in-law, Dr. Clemesha, of Port Hope, and Drs. Dawson, Anderson, Bingham and Davidson of this city, but the disease baffled them.

Dr. Fisher was born on the 9th of January, 1850, in South Monaghan, where he spent the greater part of his life. He was educated at Victoria College, Cobourg, taught school a couple of years at Bobcaygeon, then studied pharmacy and practised as a druggist in his native place for several years, and finally studied medicine, taking up practice in Toronto about twenty years ago, where he had been ever since.

He was a member of the Ancient Order of United Workmen, and belonged to St. Philip's Church. He is survived by his wife, who was Miss Clemesha, of Port Hope; one son, Harold, a barrister in Ottawa, and one daughter, Miss Effie, at home.

MISCELLANEOUS.

 ONTARIO MEDICAL ASSOCIATION.—PROVISIONAL PROGRAMME.

The Committees on Papers and on Arrangements have pleasure in submitting the following programme for the twenty-eighth annual meeting to be held in Hamilton in the College of Music building, James street south, May 26th, 27th, and 28th. The present arrangement of papers will not necessarily be adhered to, as a new grouping of subjects may be deemed advisable before the issuing of the final programme. We believe that no programme has been sent out in the history of the Association more replete with interest from the first item to the last than this promises to be. Every practitioner in the Province can well afford to set aside these days for attendance at Hamilton.

The sectional plan of meetings has been adopted and will be enlarged if the papers will permit of doing so. Sections will meet in the mornings, the afternoons for the addresses and subjects of general interest, while the evenings will be devoted to entertainment.

TUESDAY, MAY 26TH.

Surgical Section.

L. W. Cockburn, Hamilton, "The Treatment of Acromio-Clavicular Dislocation"; H. A. Bruce, Toronto, title to be sent; N. A. Powell, Toronto, title to be sent; H. B. Lyle, Surgeon to St. Luke's Hospital, New York, "The Hyperæmic Treatment"; clinic and luncheon at the General Hospital.

Medical Section.

W. L. Silcox, Hamilton, "Opsonins," discussion to be led by W. Gibson, Kingston; W. Goldie, Toronto, title to be sent; Adam H. Wright, Toronto, title to be sent; J. Sheahan, St. Catharines, title to be sent; Benson Cohoe, Assistant Physician to the Roosevelt Hospital, New York; clinic and luncheon at the General Hospital.

General Session.

Afternoon.—President's address; Symposium—Arterio Sclerosis: Pathology of, J. J. Mackenzie, Toronto; Cerebral Manifestations, Colin K. Russell, Assistant in Medicine, University of McGill; Aortic Arch

Manifestations, Thos. McCrae, Associate Professor in Medicine, Johns Hopkins, Baltimore; Muscle Manifestations, Harry C. Buswell, Associate Professor in Medicine, University of Buffalo; Visceral Manifestations, J. H. Bauer, Hamilton; Treatment, H. A. McCallum, London.

Evening.—Smoking concert at the Yacht Club, Burlington Beach.

WEDNESDAY, MAY 27TH.

Surgical Section.

J. P. Morton, Hamilton, title to be sent; F. N. G. Starr, Toronto, title to be sent; Edwin Seaborn, London, title to be sent; G. T. McKeough, Chatham, "Mechanical Ileus; Operation; Recovery; Remarks on the Treatment"; W. E. Olmsted, Niagara Falls, "Ulcer of the Stomach"; E. E. King, Toronto, title to be sent.

Medical Section.

G. S. Glassco, Hamilton, title to be sent; J. R. Stanley, St. Marys; R. J. Dwyer, Toronto; D. Dunton, Paris; F. Fenton, Toronto; George Hodge, London, "The Treatment of Pneumonia"; K. C. McIlwraith, Toronto; R. Ferguson, London; George Acheson, Galt.

General Session.

Afternoon.—Address in Surgery, Charles L. Scudder, Surgeon to the Massachusetts General Hospital, Boston; G. E. Armstrong, Professor of Surgery, University of McGill; V. P. Gibney, Professor of Orthopedic Surgery, College of Physicians and Surgeons, New York.

Evening.—Dinner at the Royal Hotel.

THURSDAY, MAY 28TH.

Surgical Section.

H. Sinclair, Walkerton, title to be sent; S. H. McCoy, St. Catharines, title to be sent; A. E. Garrow, Associate Professor of Surgery, University of McGill, "Duodenal Ulcer"; H. Sanderson, Detroit, title to be sent; D. E. Mundell, Kingston, "Pancreatic Cyst."

Medical Section.

D. King Smith, Toronto, title to be sent; J. T. Fotheringham, Toronto, "Malignant Endocarditis"; A. R. Gordon, Toronto, title to be sent; Campbell Howard, Assistant in Medicine, University of McGill;

G. R. Cruickshank, Windsor, "The Treatment of Appendicitis"; J. C. Meakins, Pathologist to the Presbyterian Hospital, New York, "Rheumatism."

General Session.

Afternoon.—Address in Medicine, Charles G. Stockton, Professor of Medicine, University of Buffalo; L. G. Cole, Radiographer to the Roosevelt Hospital, New York, illustrated lecture; C. K. Clarke, Toronto, "Psychiatry in Relation to General Medicine."

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The coming International Congress on Tuberculosis at Washington, D.C., in September, 1908, will be a unique event in the New World.

This Congress meets once in three years; it has never met in America, and after 1908, will not meet in this country for many years to come.

The Congress will put the people of this continent in the relation of host to the leaders of this movement in all parts of the world. It will be a real world's Congress. It will carry on, for three weeks, public discussions of the tuberculosis problem, led by the most eminent authorities on this subject, in this and other countries. Official delegates will be present from nearly all civilized countries. There will be a course of special lectures to which all members of the Congress and the general public are invited.

The Congress will be divided into seven sections, giving ample scope for participation of both scientific and lay members.

There will be a great Tuberculosis Exposition, in which one can see what is going on, the world around, in the campaign against tuberculosis.

There will be clinics and demonstrations throughout the whole period of three weeks, giving medical and lay delegates object lessons on the causes and prevention of tuberculosis.

There will be very valuable publications, of which the Transactions will be the most important. The transactions of the last Congress are published in three volumes. The proceedings of this Congress will require four volumes. These are free to all members of the Congress, who have paid their membership fee (\$5).

The cost of the Congress will far exceed the revenue derived from fees. This cost will be provided for by a special Committee of the National Association for the Study and Prevention of Tuberculosis, which will invest a large sum in the project.

The American membership should number ten thousand persons. There are two classes of members: Active members, who pay a fee of

\$5; and associate members, who pay a fee of \$2, and have all the privileges of membership, except the right to vote and to receive the printed volumes.

SMITHSONIAN INSTITUTION.—HODGKINS FUND PRIZE.

In October, 1891, Thomas George Hodgkins, Esquire, of Setauket, New York, made a donation to the Smithsonian Institution, the income from a part of which was to be devoted to "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man."

In the furtherance of the donor's wishes, the Smithsonian Institution has from time to time offered prizes, awarded medals, made grants for investigations, and issued publications.

In connection with the approaching International Congress on Tuberculosis, which will be held in Washington, September 21 to October 12, 1908, a prize of \$1,500 is offered for the best treatise that may be submitted to that Congress "On the Relation of Atmospheric Air to Tuberculosis."

The treatise may be written in English, French, German, Spanish or Italian. They will be examined and the prize awarded by a committee appointed by the Secretary of the Smithsonian Institution in conjunction with the officers of the International Congress on Tuberculosis.

The right is reserved to award no prize if in the judgment of the committee no contribution is offered of sufficient merit to warrant such action.

The Smithsonian Institution reserves the right to publish the treatise to which the prize is awarded.

Further information, if desired by persons intending to become competitors, will be furnished on application.

Washington, Feb. 3, 1908. CHARLES D. WALCOTT,
Secretary Smithsonian Institution.

SUPERINTENDENTS OF NURSES' TRAINING SCHOOLS

During the time of the meeting of the Canadian Medical Association in Montreal, the superintendents of the training schools for nurses held a meeting. Col. Jones, of Ottawa, acting on a suggestion from Princess Christian, sent a communication to the effect that a society of nurses be formed to be in the same relationship to the militia that the Red Cross nurses occupied towards the army. This was heartily agreed to. The

officers are as follows: President, Miss Snively, Toronto; 1st Vice-President, Miss Chesley, Ottawa; 2nd Vice-President, Miss Livingston, Montreal; Secretary, Miss Brent, Toronto; Treasurer, Miss Meiklejohn, Ottawa; Councillors, Miss Henderson, Toronto; Miss McDougald, Halifax; Miss Wilson, Winnipeg; Miss Chesley, Ottawa; Miss Patton, Toronto; Miss Greene, Belleville, and Miss Scott, Kingston.

WELLCOME'S PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, 1908.

Wellcome's Photographic Exposure Record and Diary banishes the greatest obstacle to success in photography—that of correctly estimating exposure. The actual determination of correct exposure is made by means of an ingenious little mechanical calculator attached to the cover of the book. A single turn of a single scale is all that is necessary. This little instrument—with its accompanying tables giving the value of the light at all times of the day and year, and its list of the relative speeds of more than 190 plates and films—is alone worth more than the cost of the whole book. It certainly saves dozens of plates which would otherwise be wasted owing to errors in exposure.

This calculator is, however, but part of the book, which contains a full article explaining all the conditions governing exposure, with special illustrations and tables for interior work, for telephotography, for copying, enlarging and reducing, for moving objects, for night photography, and for printing by artificial light. In addition, there are tables of weights and measures—imperial and metric—notes on focussing by scale, Customs regulations, a temperature chart, a full article on development, and directions for toning, intensification, reduction and similar photographic operations by the simplest and most satisfactory methods available.

Bound up with these printed pages of condensed photographic information is a complete diary for 1908, together with ruled pages for systematically recording the details of over 300 exposures; also pages for memoranda, and for recording the exposures when printing on bromide, platinotype, carbon and other printing papers.

The book is enclosed in a neat wallet cover, lettered in gold, and fitted with a pencil and a pocket for storing proofs, etc. A new and important feature of the 1908 edition is, that it entitles purchasers to a hanging card for the dark room, giving the relative exposures required when using any one of 84 varieties of bromide paper or lantern slides.

The addition of a handy table for calculating exposures in photography at night is another new and useful feature. Price in Montreal, 30 cents.

MEDICAL PREPARATIONS, ETC.

RESPIRATORY TRACT.—AFFECTIONS, SYMPTOMS, AND TREATMENT.

By ARTHUR B. SMITH, Springfield, O.

The average physician is frequently vexed in finding a condition which resists his best efforts to bring about a cure. This holds good in almost every disease at some time or other, but particularly in affections of the respiratory tract, where there may be a great variety of symptoms in several cases of the same disease.

Almost every physician has some favorite prescription for coughs, bronchitis, laryngitis, etc., which he uses until suddenly it seems to lose its efficacy—why, no one knows. Then another remedy takes its place and it, too, fails to give the desired result. It is rarely that one finds a cough remedy which will be consistently good in the majority of cases. Theoretically there appears to be a well-founded objection to the use of cough syrups in general, but nevertheless, there are times when nothing else gives satisfaction; therefore, the physician pins his faith to that remedy from which he and his patients derive the most good. It is not always easy to find such a remedy, but when it is once found, it is equally difficult to dispense with, and often the physician is almost compelled to resort to a routine treatment. In such cases, of course, he wants the best.

There are constantly being placed on the market new formulas for affections of the air passages. Some of these formulas are of undoubted benefit in some cases, but usually it will be found that the results are far from satisfactory. Many of them cannot be taken when there is any gastric complication, as is sometimes the case, because of consequent nausea and vomiting. Others seem almost invariably to act as cardiac depressants and are highly objectionable for that reason.

In phthisical patients the well-known lack of appetite and intolerance of various foods render it imperative to give remedies which will not in any way interfere with the digestive functions, while at the same time controlling or alleviating the cough and other distressing conditions.

Some time ago my attention was called to a preparation composed of a solution of heroin in glycerine, combined with expectorants, called Glyco-Heroin (Smith). Each teaspoonful of this preparation contains one-sixteenth grain of heroin by accurate dosage. It is of agreeable flavor, therefore easy to administer to children, for whom the dose can be easily reduced with any liquid, or by actual measurement. It possesses many advantages not shown by any other preparation I have used, and has none of their disagreeable features.

In citing some of the cases treated with this remedy I shall not go into a minute description of any case, but briefly state the conditions which existed and the results obtained, which were uniformly good.

Case 1. S. B., aged 16. Caught a severe cold while traveling. This developed into an unusually severe attack of bronchitis with mucous rales, pain, cough, and some slight fever. Prescribed Glyco-Heroin (Smith), one teaspoonful every two hours, decreased to every three hours. After a few doses were taken there was a decided improvement, the respirations were slower and deeper, the expectoration freer, and the temperature normal. In a few days the patient was practically well and able to return to school. No medicine except Glyco-Heroin (Smith) was given, and the results from its use were excellent.

Case 2. W. L., aged 31. Acute bronchitis; painful cough, with difficult expectoration, particularly when in a reclining posture. Glyco-Heroin (Smith) in teaspoonful doses every three hours gave speedy relief and a cure was effected in a few days.

Case 3. B. E., aged 26. Severe bronchitis, accompanying an attack of influenza. Various remedies were tried in this case, with negative results, until Glyco-Heroin (Smith) was given in teaspoonful doses every three hours. In a short time decided relief was obtained and the cough stopped permanently.

Case 4. R. L., aged 6. Capillary bronchitis, with pains over chest; cough, and difficult expectoration. Glyco-Heroin (Smith) administered, 15 drops every three hours. After taking a few doses the condition was much improved, and a speedy return to perfect health followed.

Case 5. W. H., aged 5. Whooping-cough; spasmodic paroxysms of coughing, sometimes being so severe as to cause vomiting; tenacious mucus was present, requiring great expulsive effort to loosen it. There was little fever, but the patient was much prostrated and weakened by the cough. Glyco-Heroin (Smith) was given in 10 drop doses every two hours with good results. This was combined with hygienic treatment, the patient being given as much of fresh air as possible. In a few days the condition was much ameliorated, the cough under fair control, expectoration was freer and easier to raise, and convalescence uneventful. The case was discharged cured and there were no unpleasant sequelæ, the patient at present being in perfect health.

ERYSIPELAS—PNEUMONIA.

W. E. STOFÉ, M.D., Martinsville, Ohio.

June 5, 1905, I was called to attend to Mr. K. I found him suffering with a very aggravated case of facial erysipelas. I applied my usual

treatment of carbolized salve locally, and gave the proper internal treatment, but when I saw the case again in twenty-four hours I found symptoms no better. I thought I would try Antiphlogistine. After applying the salve to face, I spread Antiphlogistine on a cloth, making a mask that would cover the entire face, directing nurse to change when it dried out.

Next day I found patient much improved. He said "that clay relieved all the burning five minutes after you applied it." I now make it a rule to use Antiphlogistine in treating erysipelas, and I am sure my patients get along faster than they did when treated without it.

I also use Antiphlogistine in pneumonia, and all cases of inflammation of the lung or pleura. Indeed I would hate to have to treat this kind of cases without Antiphlogistine. I will report on one case of an infant where I believe this remedy saved the patient's life.

Jan. 3, 1906, infant, age 18 months. Two days after initial fever, temp. 104° , resp. 48, pulse 120; tongue coated; could hardly get breath; expiratory moans, crepitent rales. Gave internal treatment, and covered both back and front of chest with Antiphlogistine. In twenty-four hours the breathing was much better and temperature lower. On my third visit I found all the symptoms so improved that I dismissed case.

THE COUGHS FOLLOWING GRIP.

Dr. John McCarty (Louisville Medical College), in giving his personal experience with this condition, writes as follows: "Ten years ago I had the grip severely and every winter until 1902, my cough was almost intolerable. During January, 1902, I procured a supply of Antikamnia and Codeine Tablets and began taking them for my cough, which had distressed me all winter, and as they gave me prompt relief I continued taking them, with good results. Last fall I again ordered a supply of Antikamnia and Codeine Tablets, and I have taken them regularly all winter and have coughed but very little. I take one tablet every three or four hours and one on retiring. They not only stop the cough, but make expectoration easy and satisfactory. The best results are obtained by allowing the tablet to dissolve slowly in the mouth before swallowing."

WINTER COUGHS—GRIPPAL NEUROSES.

That codeine had an especially beneficial effect in cases of nervous cough, and that it was capable of controlling excessive coughing in various lung affections, was noted before its true physiological action was

understood. Later it was clear that its power as a nerve calmative was due, as Bartholow says, to its special action on the pneumogastric nerve. Codeine stands apart from the rest of its group, in that it does not arrest secretion in the respiratory and intestinal tract. In marked contrast is it in this respect to morphine. Morphine dries the mucous membrane of the respiratory tract to such a degree that the condition is often made worse by its use; while its effect on the intestinal tract is to produce constipation. There are none of these disagreeable effects attending the use of codeine.

Antikamnia has also stood the test of exhaustive trial, both in clinical and regular practice and has been proven free from the usual untoward after-effects which accompany, characterize and distinguish all other preparations of this class. Therefore antikamnia and codeine tablets afford a very desirable mode of exhibiting these two valuable drugs. The proportions are those most frequently indicated in the various neuroses of the larynx as well as the coughs incident to lung affections, grippal conditions, etc.—*The Laryngoscope*.

“BOVRIL.”

When your doctor prescribes “BOVRIL” he does it with a reason. He wishes you to have the benefit of the stimulating and nutritive properties of beef.

“BOVRIL” is produced entirely from prime beef selected specially for that purpose. It presents the whole of the valuable properties of beef in a form which is easily assimilated. Every operation is carefully supervised and scrupulous cleanliness is exacted. The preparation is guaranteed not only to be pure, but also to be of an absolutely uniform quality. That is, the component parts are always present in a fixed proportion. There is always a certain percentage of the extractives of beef combined with another certain percentage of albumen, fibrin and the other important elements of beef. This result is obtained by careful analysis at different stages in the course of manufacture and by a final analysis of the finished product before it is filled into bottles.

It has been recognized by medical men that beef tea and extract of meat possess merely stimulative value. “BOVRIL” is unique in that it contains the nutritive as well as the stimulating elements of beef, and its uniformity of composition is a very strong recommendation from the medical standpoint.